

HEALTH STATUS OF TENNESSEANS

TENNESSEE HEALTH STATUS REPORT 1998



TENNESSEE DEPARTMENT OF HEALTH
AND THE
COMMUNITY HEALTH RESEARCH GROUP
THE UNIVERSITY OF TENNESSEE, KNOXVILLE
JANUARY, 1999

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January, 1999

The Tennessee Department of Health is pleased to provide you with this copy of the *Tennessee Health Status Report, 1998*. The first report, issued in 1997, proved to be an excellent tool for providing needed health information to the health care industry, to researchers, and to many others interested in the health status of Tennesseans.

The Tennessee Department of Health has maintained its partnership with the Community Health Research Group of the University of Tennessee, Knoxville, to respond to the persistent and growing need for health information. Together we are providing Tennessee's health information on the internet and building the information infrastructure necessary for a comprehensive State Health Plan.

Under the direction of Dr. Sandra Putnam, the Community Health Research Group provides health research, including data processing, data analysis, and report writing to produce the *Tennessee Health Status Report, 1998*. Our internet site provides widespread dissemination of specific data elements from within this report and allows customized reports tailored to your needs. We encourage you to visit the site at this address: server.to/hit.

The Tennessee Department of Health hopes you find this report and the internet site informative and beneficial. Any questions may be directed to Bill Wirsing at (615)532-7901.


Nancy Menke
Commissioner



Fredia Wadley, M.D.
State Health Officer

TABLE OF CONTENTS -- TENNESSEE HEALTH STATUS REPORT, 1998

INTRODUCTION	1
DEMOGRAPHIC CHANGES, ESTIMATES AND PROJECTIONS	4
Overall Population	4
Elderly Population (Ages 65 & Over)	6
Population Projections	9
MORTALITY IN TENNESSEE, 1996	11
General Mortality	11
Leading Causes of Death	14
Infant/Neonatal/Postneonatal Mortality	17
Chronic Disease Mortality	18
The Disease Burden in Tennessee, 1990- 1992 and 1994-1996	19
RANKING TENNESSEE'S HEALTH STATUS RELATIVE TO THE U.S., 1996	23
SPECIAL POPULATION SUBGROUPS: HEALTH AND HEALTH CARE ISSUES	26
Hispanics	26
Demographic Changes	26
Mortality of Hispanics in Tennessee, 1996	30
Morbidity of Hispanic Adults in Tennessee, 1993	32
The Health Status of Hispanic Youth in Tennessee, 1995/1997	34
Health Status of African-Americans in Tennessee	38
Homicide and Diabetes -- Issues in Blacks' Mortality and Morbidity Experience in Tennessee	38
The Health Status of Adult and Juvenile Arrestees, Tennessee, 1996-1997	40
High School Students' Health in Tennessee	44
Improvements in Health Risk Behaviors among Tennessee High School Students Surveyed in the YRBSS from 1991-1997	44
Increased Health Risks for High School Students in the YRBSS for 1991-1997	45
Stabilization of Rates of Risk Practices among High School Students from YRBSS	46
The School as a Locus of Risky Practices among High School Students, Tennessee, 1997	46
Youth Alcohol, Tobacco, and Other Drug Use, 1997, YRBSS	48
Other High Risk Practices	50
Physical and Mental Health of Young Adult High School Leavers, Tennessee, Alcohol, Tobacco, and Other Drug Needs Assessment Survey, 1993	53
Sociodemographic Differences Between Young Adult School Leavers and Stayers	53
Comparison of Health Status, Utilization and Access to Care by Leaver Status	53
Alcohol and Other Drug Use among Young Adult School Leavers	55
Summary and Conclusions	56
ADULT HEALTH STATUS IN TENNESSEE, BRFSS, 1996	58
Selected Results	58
Health Status and Morbidity among Tennessee Adults	58
Health Access	59

Utilization of Preventive Services	59
Risk Factors	59
VIOLENCE IN TENNESSEE -- MORTALITY (HOMICIDE/SUICIDE) AND MORBIDITY (ASSAULT, DEPRESSION, AND SUICIDE ATTEMPTS)	70
Homicide	70
Weapons And Assaults -- Adolescent Violence	70
Suicide	71
Suicide Risk Among High School Students	71
MORTALITY AND MORBIDITY RELATED TO MENTAL DISORDERS IN TENNESSEE: YOUTH AND ADULTS	73
COMPARISON OF SELECTED INFECTIOUS DISEASE RATES, TENNESSEE AND THE U.S., 1996	76
Selected Infectious Diseases, 1996	77
HIV/AIDS in Tennessee, 1997	79
ADOLESCENT PREGNANCY IN TENNESSEE: PREGNANCY RATES, BIRTH RATES, AND ADVERSE CONDITIONS, 1990-1996	82
TENNCARE ENROLLMENT AND ELIGIBILITY AS OF DECEMBER 1997 AND FEBRUARY, 1998	87
HEALTH FACILITIES, 1996	92
Hospitals, Tennessee 1996	92
Utilization - Inpatient Care	92
Costs	93
Utilization - Emergency Care	96
Nursing Homes, Tennessee, 1996	97
Resources - Facilities	97
Utilization	97
Costs	98
Mental Health Treatment in Regional Mental Health Institutes, Tennessee, 1997	99
Licensed Mental Health and Mental Retardation Facilities Tennessee, as of June 1998 .	100
HEALTH MANPOWER, TENNESSEE, 1998	101
FTE Primary Care Providers, 1998	101
Physician Services	101
Obstetric Services	102
Pediatric Services	103
TennCare Primary Care Providers	103
Health Resource Shortage Areas, as of July 1998	104
OTHER FACILITIES AND MANPOWER DATA, COMPARING TENNESSEE AND THE U.S.	107
CHILDREN'S HEALTH STATUS AND HEALTH INITIATIVES IN TENNESSEE (KIDS COUNT AND TN KIDS)	112
Demographic Trends	112
Children's Health Status and Health Initiatives in Tennessee and Changes from 1985 to 1995	112

Child Health Insurance, 1995	113
1995 Child-Care Indicators	113
EMERGING HEALTH CARE INITIATIVES	119
IMPROVEMENT STRATEGIES: WHERE DOES TENNESSEE GO FROM HERE?	120
THE TN KIDS INITIATIVE	121
SUMMARY	123
ABOUT THE HEALTH INFORMATION TENNESSEE (HIT) WEB SITE	145
DATA COMPENDIUM FOR TENNESSEE HEALTH STATUS REPORT, 1998	147

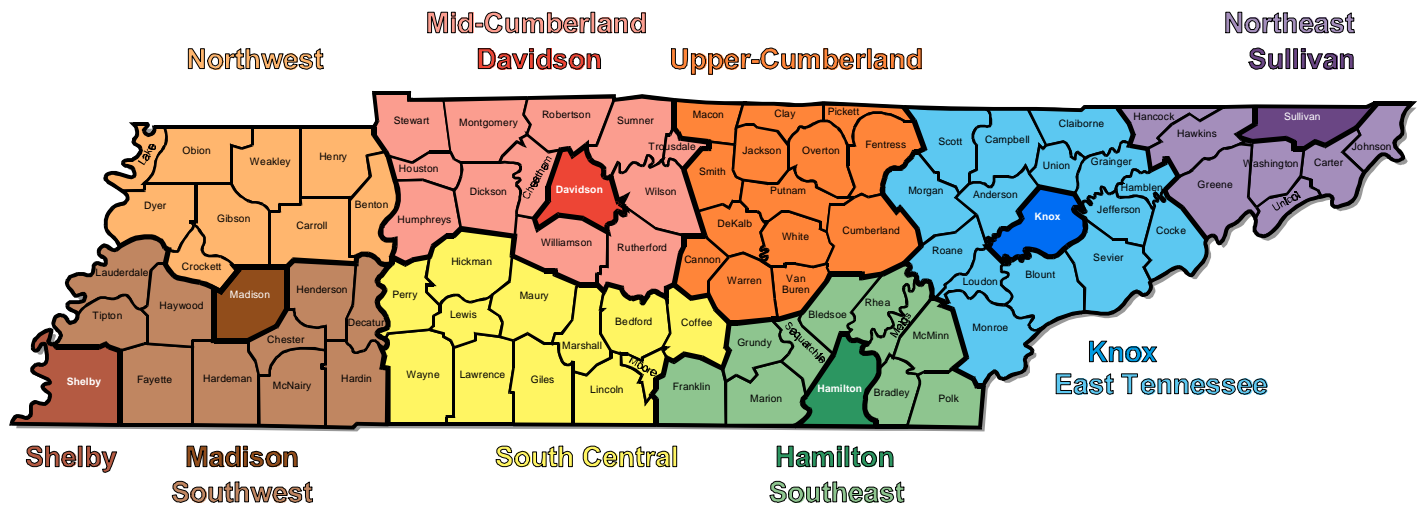
INTRODUCTION

- The Tennessee Health Status Report, 1998 is the second in a series of Tennessee Health Status Reports. These reports are benchmark, objective appraisals of the health status of Tennesseans.
- Three focal points are current health-related characteristics of the population, emerging health issues, and guidelines for improvement.
- Baseline health status information is provided at state, regional, and county levels by age, sex, race, and risk, supplemented by access to tables, reports and case level data for customized analysis and mapping on the Health Information Tennessee (HIT) Web site (*server.to/hit*).
- Population subgroups at excess risk of health problems and disability are identified and profiled.
- Selected comparisons are made with indicators from CDC's Healthy People 2000 Objectives, and progress toward their achievement is monitored.
- Data are presented for health manpower, hospitals, nursing homes and other health facilities, and for services utilization. Health professionals are classified by major professional category. Licensed, regulated health facilities - hospitals and nursing homes - are located and described at the county level.
- Goals of Report '98 are to:
 - provide baseline measures for health status and problem identification in Tennessee;
 - present trends over time in key health indicators;
 - further develop needs assessment and planning infrastructure;
 - maximize communication via integrated data-sharing technologies;
 - target potential year-by-year goals; and
 - identify possible outcome measures to monitor goal attainment.
- The Tennessee Department of Health (TDH) is a department of State government headed by a cabinet level appointee reporting directly to the Governor.
- TDH divides the State into 14 statistical regions - 6 metropolitan counties and 8 nonmetropolitan clusters of counties.
- Health departments in each of 95 counties have a county health officer, a local county director, and a board of health. Each county and region has established a

health council composed of community residents to support the Community Diagnosis Initiative begun in 1995.

- The vision of the TDH is for “healthy individuals, families, and communities for a healthy Tennessee.”
- The mission of the TDH is to provide the leadership and support necessary to promote, protect, and improve the physical and mental health and well-being of Tennesseans.
- To accomplish the mission of the Department, the following goals have been established:
 - move to a more efficient and effective Department of Health
 - offer every child a safe, healthy start
 - maximize the health status of individuals, families, and communities
 - protect public health safety
 - create supports for good, high paying jobs
 - promote quality service through partnerships with individuals, families, and providers
 - promote public awareness of good health and well-being

TENNESSEE'S HEALTH DEPARTMENT REGIONS



Metropolitan Regions are six counties: Sullivan, Knox, Hamilton, Davidson, Madison and Shelby.

Nonmetropolitan Regions are eight clusters of counties listed below.

Northeast

Carter
Greene
Hancock
Hawkins
Johnson
Unicoi
Washington

East

Anderson
Blount
Campbell
Claiborne
Cocke
Grainger
Hamblen
Jefferson
Loudon
Monroe

Southeast

Bledsoe
Bradley
Franklin
Grundy
Marion
McMinn
Meigs
Polk
Rhea
Sequatchie

Upper Cumberland

Cannon
Clay
Cumberland
DeKalb
Fentress
Jackson
Macon
Overton
Pickett

Mid-Cumberland

Cheatham
Dickson
Houston
Humphreys
Montgomery
Robertson
Rutherford
Stewart
Sumner
Trousdale
Williamson
Wilson

South Central

Bedford
Coffee
Giles
Hickman
Lawrence
Lewis
Lincoln
Marshall

Northwest

Benton
Carroll
Crockett
Dyer
Gibson
Henry
Lake
Obion
Weakley

Southwest

Chester
Decatur
Fayette
Hardeman
Hardin
Haywood

DEMOGRAPHIC CHANGES, ESTIMATES AND PROJECTIONS

Overall Population

- Compared to the United States, in 1996, Tennessee had:
 - a lower percentage of Asians/Pacific Islanders
 - a slightly lower percentage of American Indians/Eskimos/Aleuts
 - a higher percentage of blacks
 - a similar percentage of whites
 - a lower percentage of Hispanics.
- Tennesseans were poorer than the average US resident.¹ A higher percentage of Tennesseans (16%) lived below the poverty level than in the US in 1996 (14%), and a higher percentage of Tennessee school-age children (21%) also lived below poverty compared to the US (19%) in 1996.
- Tennesseans were, on average, less well-educated than their US counterparts. In Tennessee, a lower percentage of the population aged 25 and over had a minimum of a high school education (79% versus 82%), and a lower percentage had completed a bachelor's degree or more (19.5% versus 24%, respectively) in 1996.
- The overall increase in Tennessee's population between 1990 and 1996 was 9.1%. The overall increase for the United States between these years was 6.6%.
- Between 1990 and 1996, the percentage increase in each racial/ethnic category (white, black, Hispanic, American Indian, and Asian/Pacific Islander) was higher in Tennessee than the overall percentage increase in each of these groups in the United States.
- The largest population increases, both in Tennessee and the United States, between 1990 and 1996, occurred within the Hispanic and the Asian/Pacific Islander populations. The Asian/Pacific Islander population in Tennessee increased by 49% between 1990 and 1996, compared to a 31% increase for the United States. The Hispanic population in Tennessee increased by 60% between 1990 and 1996, which was more than twice as large an increase as that in the United States Hispanic population in the same period (26%).

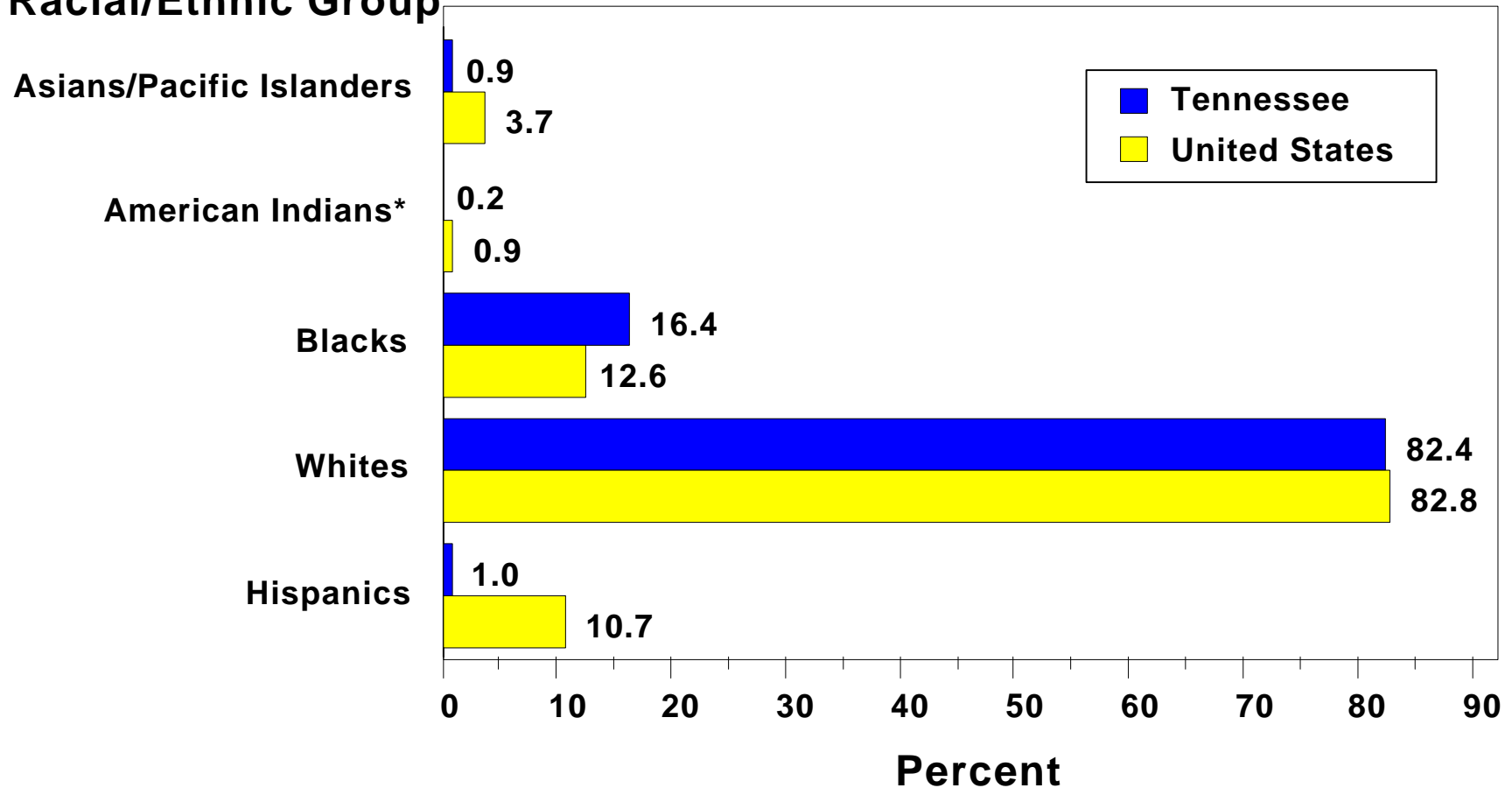
Notes: 1990 population data are from the April 1990 census. The 1996 population estimates were still in effect as of June 1998. Population numbers and percentages might not correspond exactly to those currently available on the Census Web site due to periodic changes and continuous updates made by the U.S. Bureau of the Census.

Source: U.S. Census Bureau, **Estimates of the Population of States by Race and Hispanic Origin**, as of December, 1997, and **Tennessee State Health Profile, 1998**, USDHHS, Centers for Disease Control and Prevention.

¹Poverty is defined, from the U.S. Census, as below 100% of Federal poverty guidelines in 1996.

Racial/Ethnic Population Composition: Tennessee and the United States, 1996

Racial/Ethnic Group

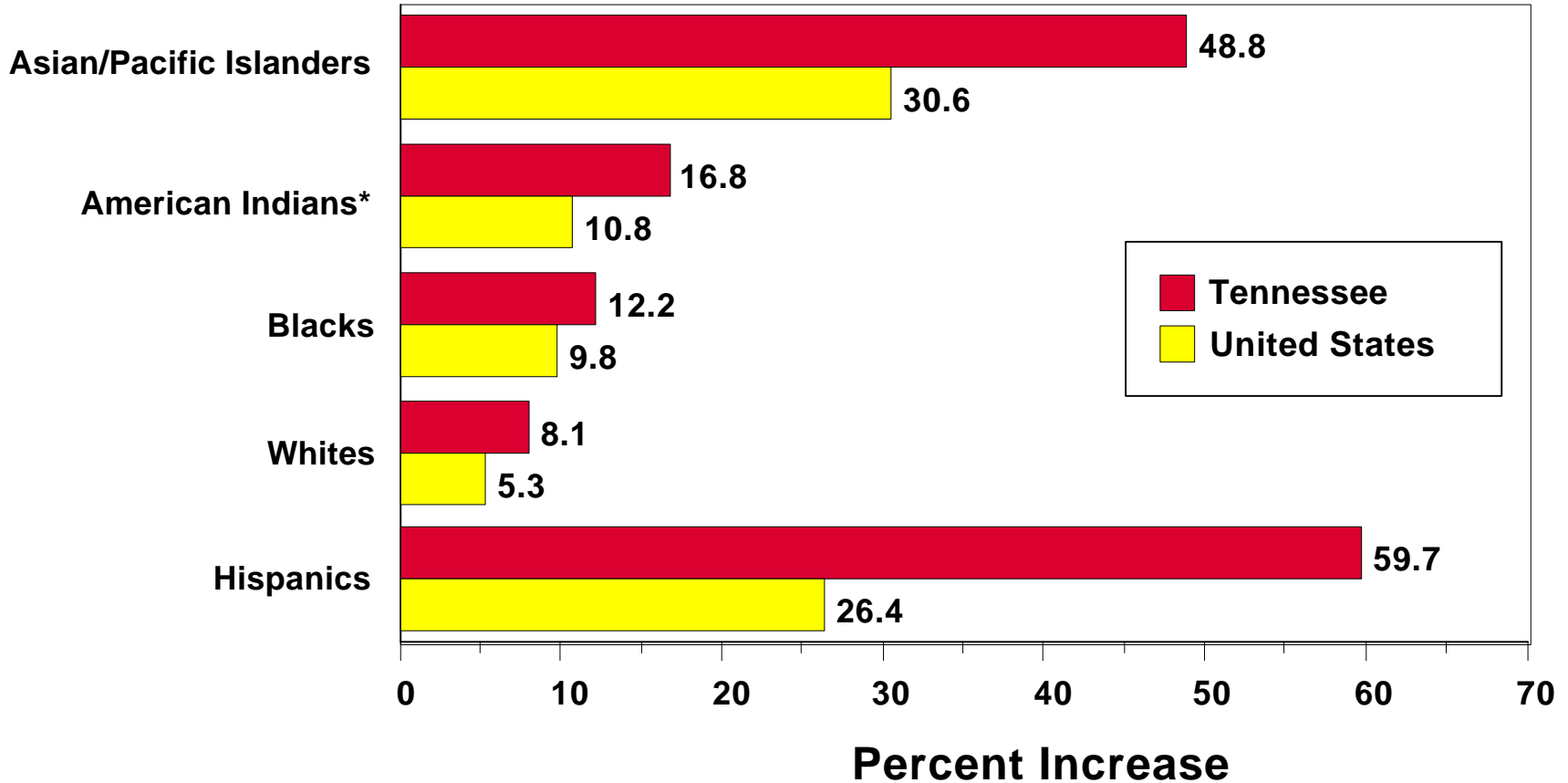


* Includes Eskimo and Aleut population.

Source: U.S. Bureau of the Census, "Estimates of the Population of States by Race and Hispanic Origin," January 1998.

Percent Change in Population: Tennessee and the United States, 1990 to 1996

Racial/Ethnic Group



* Includes Eskimo and Aleut population.

Note: 1990 population data are from the April 1990 Census.

Source: U.S. Bureau of the Census, "Estimates of the Population of States by Race and Hispanic Origin," December 1997.

Elderly Population (Ages 65 & Over)

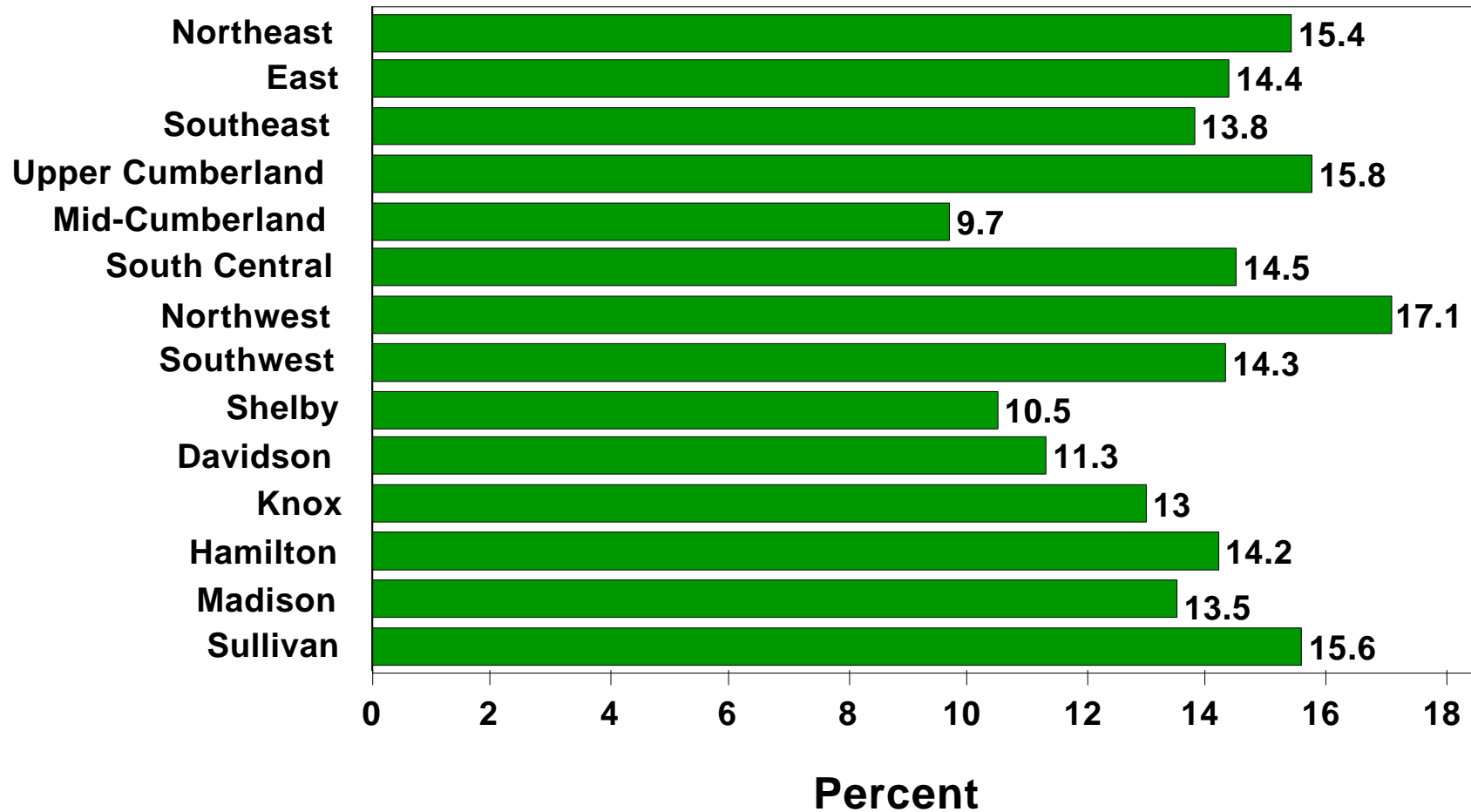
- The number of elderly persons (ages 65 and over) has increased by 11% from 1990 to 1996 in Tennessee. In 1996, people aged 65 and over made up 12.9% of Tennessee's total population compared with 12.7% in 1990.
- In 1996, the elderly population was 61% female and 39% male. From 1990 to 1996, elderly females increased by 12% and elderly males increased by 10%.
- In 1996, the elderly population was 11% black, 88.7% white, and 0.3% other races.
- The number of elderly blacks increased by 3% from 1990 to 1996. During the same period, the number of elderly whites increased by 12%. The number of elderly persons of other races increased by 7% .
- In 1996, 8.9% of all blacks in Tennessee were elderly, down from 9.5% in 1990.
- In 1996, 14% of all whites in Tennessee were elderly. This is a very slight increase from 1990, when 13% of all whites in Tennessee were aged 65 and over.
- In 1996, the region with the smallest percentage of elderly was the Mid-Cumberland Region (10%). The smallest percentages of elderly persons by county lived in Rutherford (8%), Cheatham (8%), Montgomery (8%), Williamson (8%), and Wilson (9.5%) Counties.
- In 1996, counties with the largest percentage of elderly persons were Henry (20%), Cumberland (20%), Decatur (19%), Houston (19%), and Unicoi (19%) Counties. The region with the largest percentage of elderly was the Northwest Region (17%).
- Among the elderly, the age-group with the largest percentage increase (28%) from 1990 to 1996 was the oldest old, ages 85 and over. This age-group also had the largest gap in the percentage (73%) of females compared to males (27%) in 1996.
- In 1996, people ages **65-74**:
 - constituted approximately 55% of the total elderly population in Tennessee
 - were 57% female and 43% male
 - were 10.8% black, 88.9% white, and 0.3% other races.
- The number of people ages **65-74** increased 6.6% from 1990 to 1996. Within this age-group, the number of females increased 6.4%, and the number of males increased 6.8% from 1990 to 1996.
- The increase from 1990 to 1996 in the number of blacks, whites, and other races, for ages **65-74**, was 0.6%, 7.3%, and 5.8%, respectively.
- In 1996, people ages **75-84**:

- constituted approximately 34% of the total elderly population in Tennessee
- were 64% female and 36% male
- were 11.1% black, 88.7% white, and 0.2% other races.

- Persons ages **75-84** increased by 14.4% from 1990 to 1996. Within this age-group, females increased by 14.6% and males, 14.1%.
- The increase from 1990 to 1996 in the number of blacks, whites, and other races, for ages **75-84**, was 2.5%, 16.1%, and 5.6%, respectively.
- In 1996, people ages **85 and over**:
 - constituted approximately 11% of the total elderly population in Tennessee
 - were 73% female and 27% male
 - were 11.9% black, 87.9% white, and 0.2% other races.
- The number of people ages **85 and over** increased by 28% from 1990 to 1996. Within this age-group, the number of females increased by 29% and males increased by 25.1%.
- The increase from 1990 to 1996 in the number of blacks, whites, and other races, for ages **85 and over**, was 16.4%, 29.7%, and 21.8%, respectively.

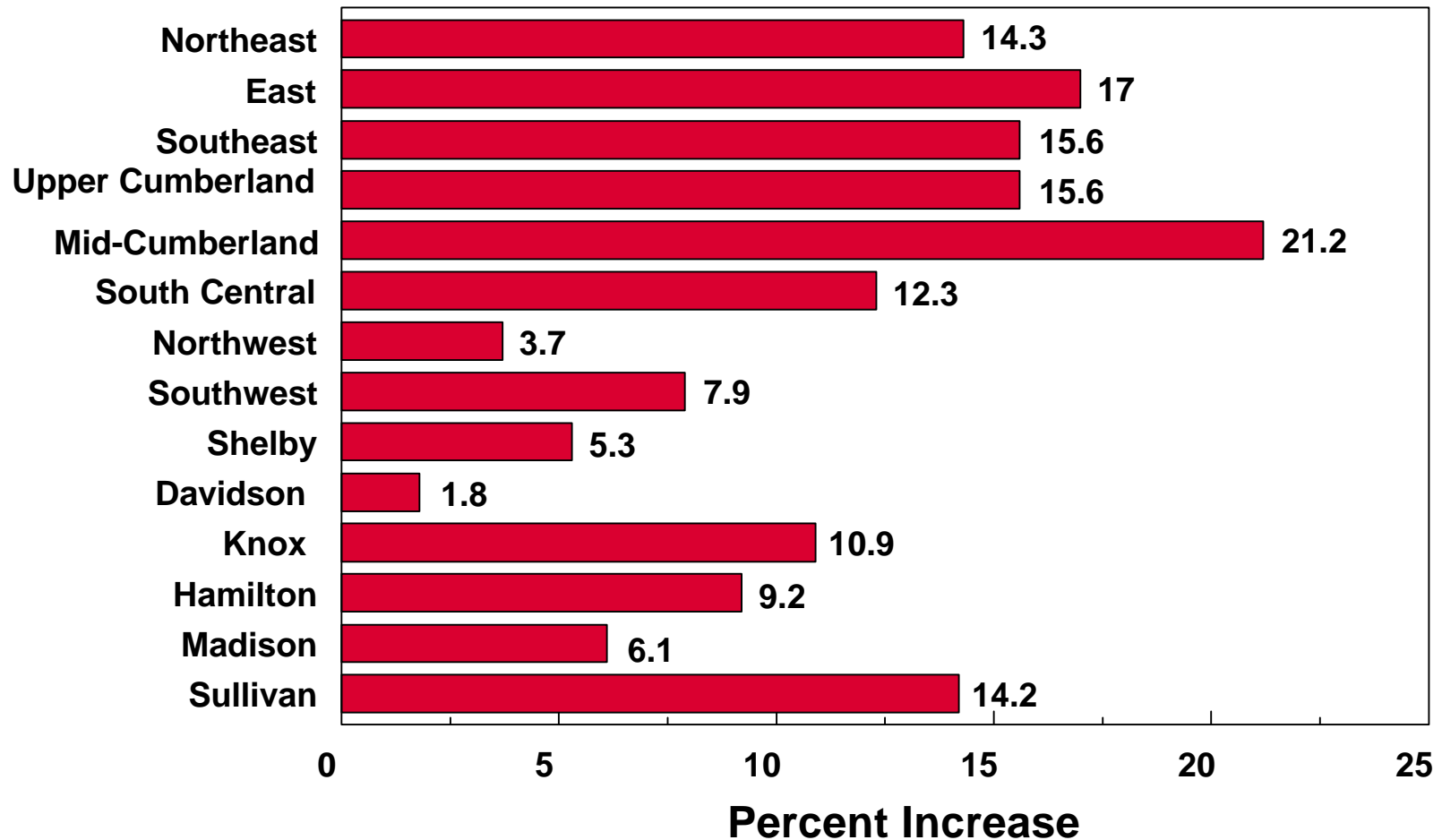
Note: Population data for 1990 are from the April 1990 U.S. Census. See also Health Information Tennessee Web site (server.to/hit), CHRG-TDH June 1998.

Percent of the Population 65 Years of Age and Older, by Region: Tennessee, 1996



Source: Health Information Tennessee Web site (server.to/hit), TDH-CHRG, June 1998

Percent Increase in Population Aged 65 and Older by Region: Tennessee, 1990-1996



Source: Health Information Tennessee Web site (server.to/hit), TDH-CHRG, June 1998

Population Projections

Projected population trends for the United States can be used to approximate future trends for Tennessee's population. The projected population trends for the United States are as follows:

- The percent of the population in their 50's will increase by approximately 50% from 1996 to 2006. This is largely due to the fact that post-World War II baby boomers began to turn 50 in the latter part of 1996.
- The rate of population growth of the elderly (ages 65 and over) will be very slow for the next seven to twelve years. It is projected that the percent of the population ages 65 and over will remain steady during the next 8 years.
- The number of elderly will greatly increase between the years 2010 to 2030. This is the period when baby boomers will swell the ranks of the elderly (ages 65 and over).
- The age-group comprising people ages 85 and over will double in size from 1995 to 2025. By 2050, a fivefold increase in size is projected.
- The non-Hispanic white population² will account for only 25% of the total population growth during the next seven years. From 2030 to 2050, this group will be declining in size, and, therefore, will not contribute to the population growth.
- The percentage of the population that is non-Hispanic white will decrease by approximately 28% from 1995 to 2050.
- By the middle of the twenty-first century, the black population will have nearly doubled in size from 1995. Each year after 2016, growth within the black population will be larger than growth occurring within the non-Hispanic white population.

²The U.S. Census Bureau defines four race categories (white, black, American Indian/Alaskan Native, and Asian/Pacific Islander) and two ethnic categories (Hispanic and non-Hispanic). Within this system, every person is classified as both a member of one of the four race groups and as being either Hispanic or non-Hispanic. The total number of Hispanics in a population refers to all Hispanics in the population, regardless of race. More specifically, Hispanics are defined as "persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race". The majority of Hispanics are white; therefore, "white Hispanic" is used to describe the Hispanic portion of the white population. The white non-Hispanic population refers to whites who are not of Hispanic origin. The total white population is the sum of white Hispanics and white non-Hispanics.

- The highest rates of growth will occur within the Hispanic and Asian/Pacific Islander populations through the year 2030. It is projected that annual growth rates within these groups may exceed 2% until 2030.
- The Hispanic population will add the largest number of people to the total population each year through the year 2050. It is projected that Hispanics may become the second largest race/ethnic group in the U.S. by 2010. In Tennessee, with a lower Hispanic population base, trends will be in the same direction but of lower magnitude than in the U.S.
- Less than half of the population ages 17 and under will be non-Hispanic whites by the year 2030. However, in 2030, non-Hispanic whites will account for 75% of the population ages 65 and over.

Note: These population projections should be regarded as crude estimates for Tennessee, accurate only to the extent that Tennessee's population composition is like that of the United States.

Source: **Current Population Reports - Population Projections of the United States by Age, Sex, Race, and Hispanic Origin: 1995 to 2050.** U.S. Bureau of the Census, 1996.

MORTALITY IN TENNESSEE, 1996

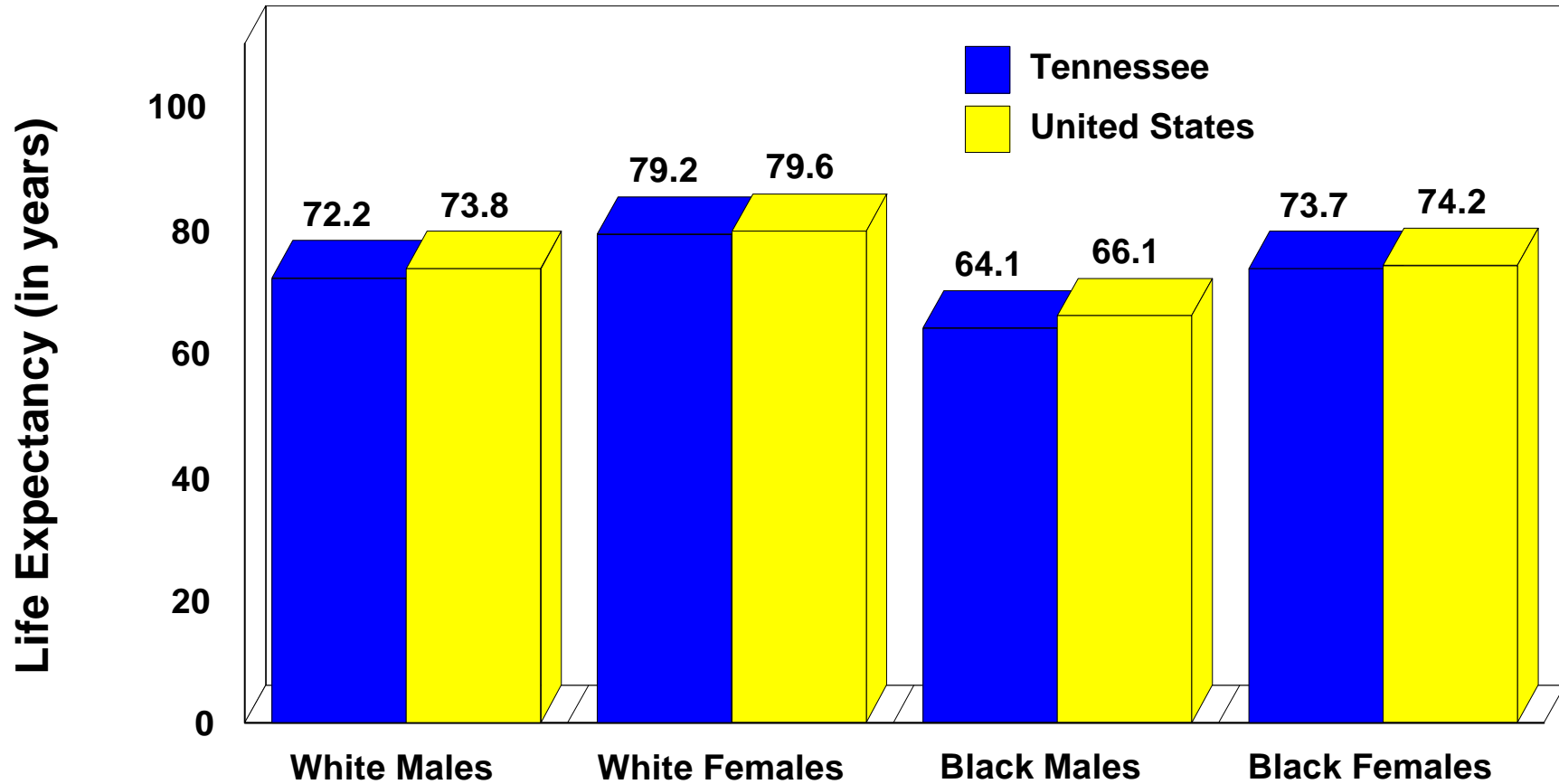
General Mortality

- The crude death rate in Tennessee in 1996 was 966 deaths per 100,000 population. Respective rates for white males, white females, black males and black females were 1014, 935, 1105 and 862. Among the regions, Northwest Tennessee had the highest crude death rate with 1,278 deaths per 100,000, followed by three regions – Upper Cumberland (1,089), Northeast (1,084), and Southwest (1,081). The Mid-Cumberland Region had the lowest crude death rate at 698 per 100,000 population. The second lowest regional rate was 928 for both Shelby and Knox Counties. Important contributors to the magnitude of the regional rates are age and racial composition.
- Blacks have younger population age structures than whites, which serve to depress their crude death rates relative to those of whites. For example, only 9% of blacks in Tennessee in 1996 were aged 65 years and older compared with 14% of whites. The age-adjusted death rates for white males, white females, black males and black females were 670, 381, 1110 and 596 per 100,000 population, respectively. Whereas the crude death rate for black males was 18% higher than that of white females, their age-adjusted death rate was nearly three times higher than the corresponding rate for white females.
- To stabilize the data in examining changes in mortality rates, rates for the period 1990-1992 are compared with rates for the period 1994-1996. (Annual data are available from SPOT on the HIT Web site). The age-adjusted death rate for Tennessee for the period 1994-1996 was 555 per 100,000 – virtually unchanged from the rate for 1990-1992 (556 per 100,000). By contrast, the age-adjusted rate for black males rose by 4% to 1,114 per 100,000, and that of white males declined by 3% to 682. The rate for white females increased by 2% to 385 per 100,000, and that of black females declined by 1% to 601.
- Life expectancy at birth represents the average number of years a newborn could be expected to live assuming persistence of prevailing mortality conditions. It has fluctuated over the period 1990-1996 for the Tennessee population. A newborn in 1996 could be expected to live 74.8 years – up from 74.2 years in 1990. In 1996, life expectancy at birth for the general US population was 76.1.
- White males in Tennessee exhibited a steady gain in life expectancy at birth between 1990 and 1996. This gain was almost a year – with the increase from 71.3 to 72.2 years. Life expectancy for US white male newborns was 73.9 years in 1996. Between 1990 and 1996, the remaining expected lifetime for white Tennessee

males aged 25 increased from 48.1 years to 48.8 years. For those aged 65, it rose from 14.4 years in 1990 to 15 years in 1996.

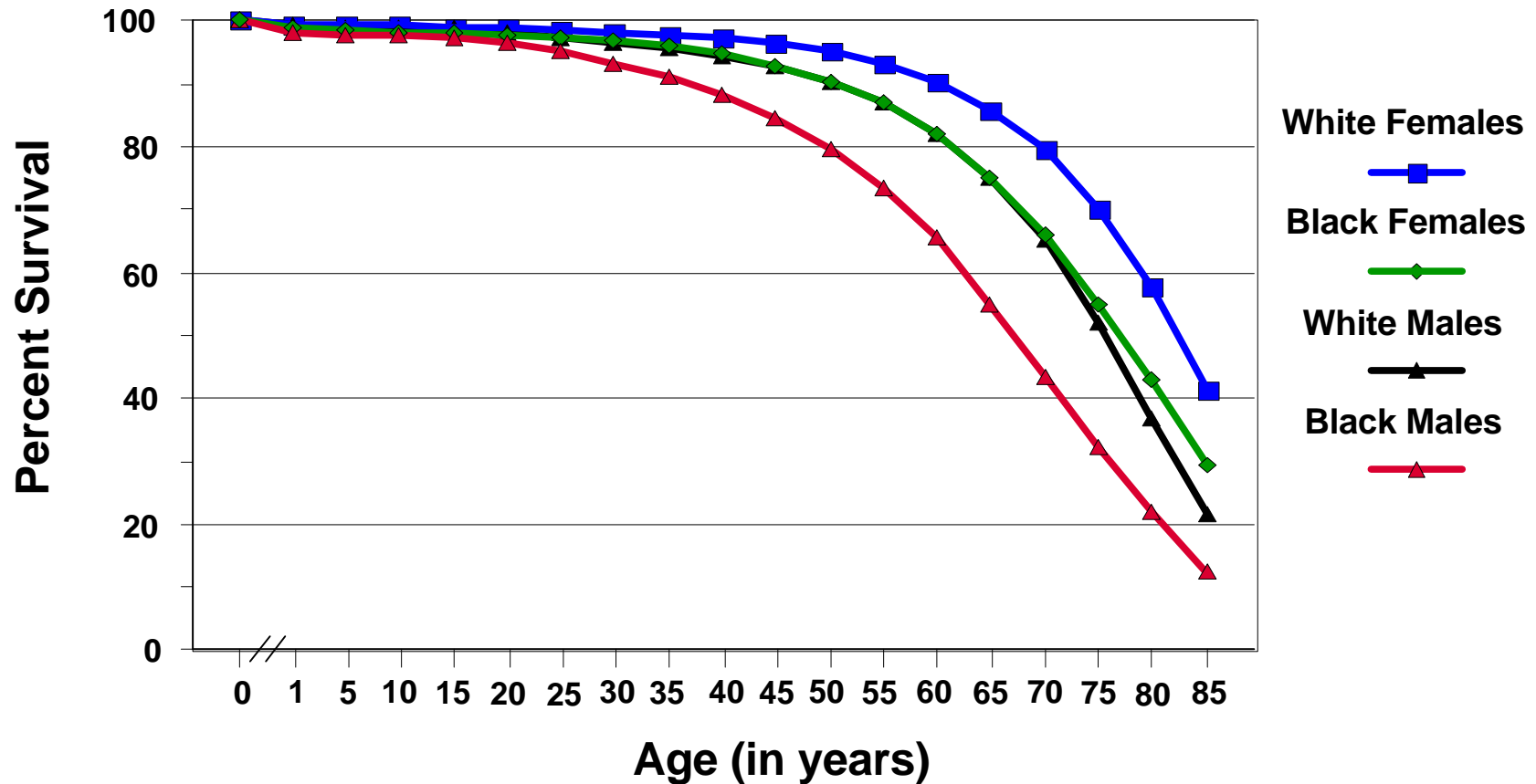
- Among whites, the gender gap in life expectancy at birth declined almost one year between 1990 and 1996. This paralleled the national trend. In 1990, white females had a life expectancy of 79.1 years. By 1996, it was marginally higher at 79.2 years. This was about three-tenths of a year less than their life expectancy in 1992, 79.5 years. Although the losses were smaller, life expectancy for white females at ages 25 and 65, respectively, also declined between 1992 and 1996. Life expectancy at birth for the national white female population was 79.7 years.
- Black males in Tennessee manifested a steady decline in life expectancy at birth, from 64.9 years in 1991 to 63.3 years in 1995. This downward trend reversed in 1996, with life expectancy reaching 64.1 years. Life expectancy at birth for the US black male population was 66.1 years.
- Black males aged 25 in 1991 could expect an additional 43.1 years of life. By 1995, this expected remaining lifetime had declined to 41.5 years, and then rose to 41.8 in 1996. Remaining expected years of life for black males aged 65 was 13.2 years in 1996. This compares with 12.9 in 1990 and 13.3 in 1991.
- Life expectancy at birth for black females was 73.7 in 1996. It was 73.1 in 1990. The peak achieved during the period 1990-1996 was 73.8 in 1992. Nationally, life expectancy for black female newborns in 1996 was 74.2 years. Remaining expected life for black females in Tennessee aged 25 and 65 in 1996 was 50.4 and 17 years, respectively. Corresponding peaks of remaining lifetime for these two groups for the period 1990-1996 were 50.8 and 17.3 in 1992.
- In contrast to whites, the gender gap in life expectancy at birth for blacks in Tennessee expanded -- from 8.7 years in 1990 to 9.5 years in 1996. Nationally, the advantage for black females declined by a year between 1990 and 1996, from 9.1 years to 8.1 years.
- Survival curves show duration of life that newborn white and black males and females could be expected to attain with the persistence of the mortality conditions prevailing in Tennessee. The inferior life chances for black males born in 1996 are very apparent. At age 65, only 55% of black males would still be alive compared with 86% of white females and 75% of both black females and white males.
- At age 85, the survival curves indicate that 41% of white female newborns in 1996 would still be alive. This compares with 30% of black females, 21% of white males and only 12% of black males.

Life Expectancy at Birth by Race and Sex: Tennessee and the United States, 1996



Source: Tennessee Department of Health
Analyses were based on the LIFETIME computer program developed at Macquarie University for the World Health Organization, Geneva, Switzerland.

Survival Curves by Age, Sex and Race: Tennessee*



*Based on 1996 data and assuming persistence of 1996 mortality conditions

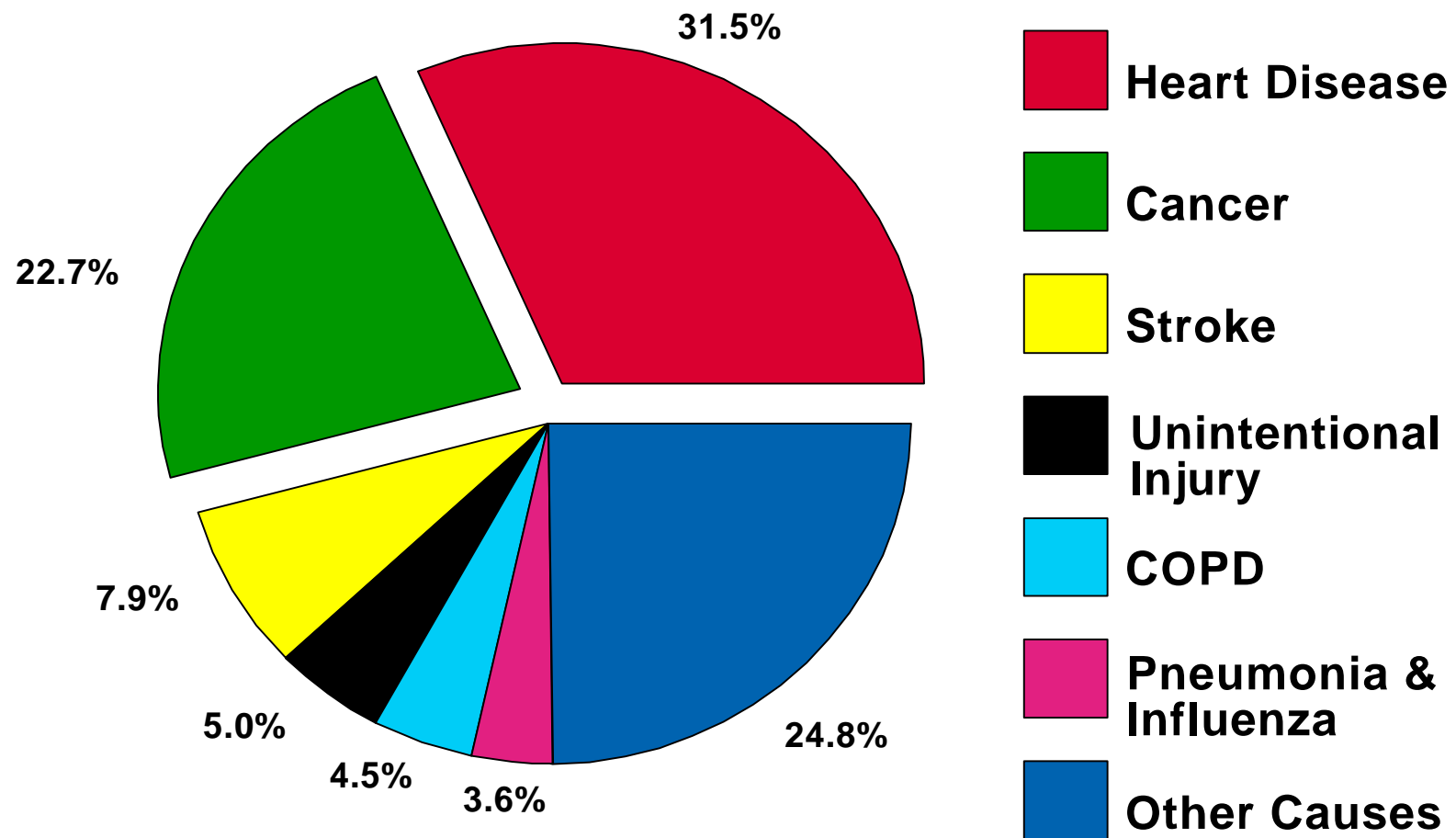
Source: Tennessee Department of Health

Health Statistics and Information

Leading Causes of Death

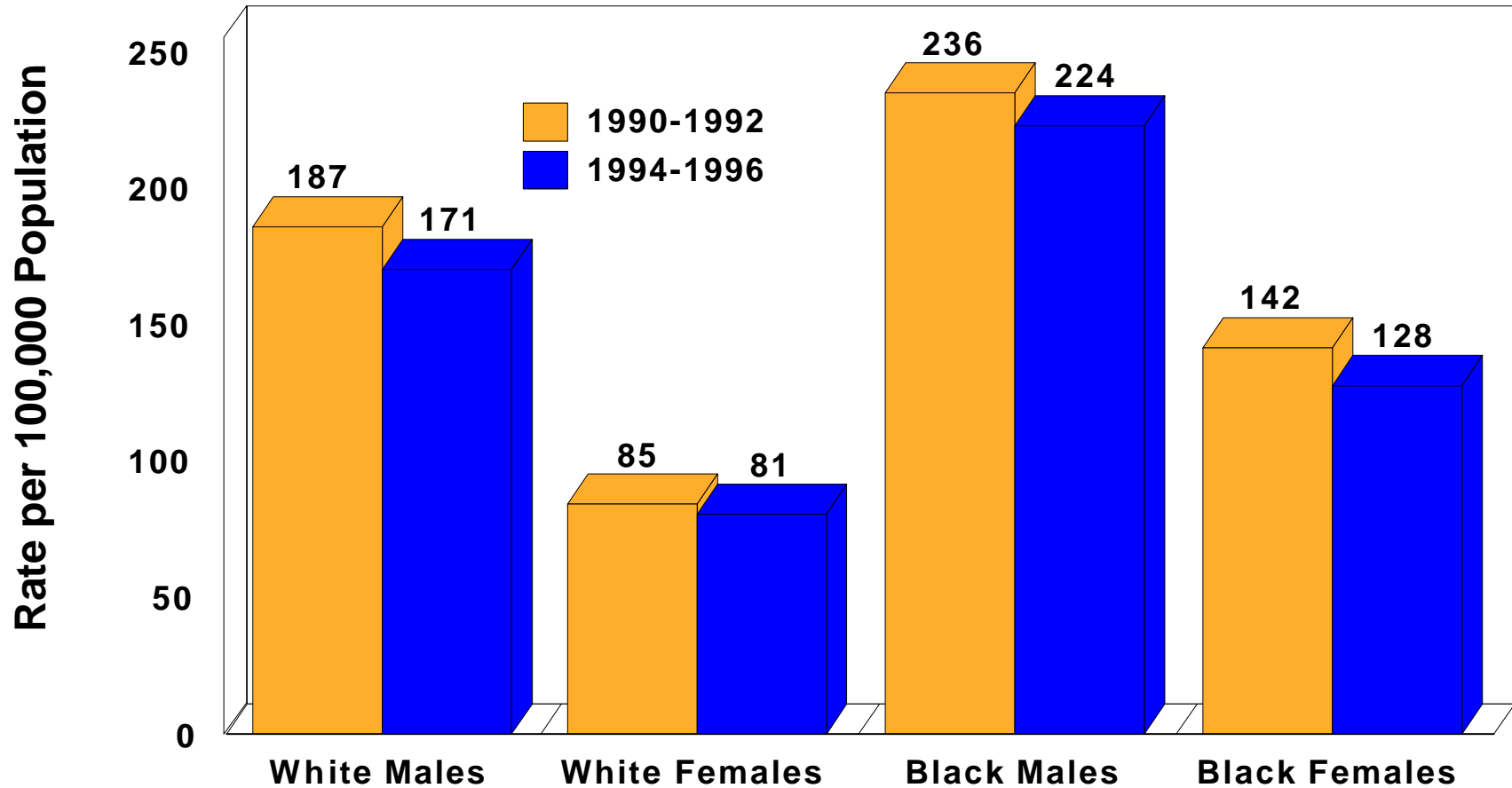
- In descending rank order, the five leading causes of death in Tennessee in 1996 were heart disease, cancer, stroke, unintentional injury (“accidents and adverse effects”), and chronic obstructive pulmonary disease (COPD). They accounted for approximately 16,174, 11,635, 4,064, 2,583 and 2,302 deaths, respectively. Heart disease and cancer combined to cause 54% of all deaths in 1996. Stroke, unintentional injury, COPD, and pneumonia and influenza collectively accounted for 21% of the deaths.
- In 1996, injury predominated as a cause of death in Tennessee from ages one year through 44. Unintentional injury was the leading cause of death from ages one through 34, and the second leading cause of death at ages 35-44. Intentional injury deaths comprise suicide and homicide. Suicide ranked second as a cause of death at ages 10-14 and third at ages 15-24. Homicide ranked second at ages 15-34 and third at ages 5-9.
- Suicide ranked as the second leading cause of death among Tennessee whites at ages 10-34 and ranked third among blacks at ages 15-24.
- Homicide was the leading cause of death among Tennessee blacks in 1996 at ages 15 through 34 years. It was the second leading killer of black children and youth ages 5-14 and third at ages 1-4.
- Cancer was the leading cause of death among Tennesseans ages 45-64 and ranked second to heart disease at ages 65 years and older. It ranked second at ages 5-9 and third at ages 1-4 and 10-14.
- HIV/AIDS did not rank among the top 10 killers overall in Tennessee in 1996. However, it ranked third as a cause of death at ages 25-34 years, fifth at ages 35-44, eighth at ages 15-24, and ninth at ages 45-54. HIV/AIDS was the second leading cause of death for blacks ages 25-34 and third at ages 35-44. It was the fourth ranked cause of death among whites ages 25-34 and fifth at ages 35-44.
- Stroke was the third leading overall cause of death among both whites and blacks in 1996. Among blacks, it ranked third at ages 45 and older as also among whites at ages 65 and older. Stroke was the fourth ranked cause of death among whites ages 45-64.
- COPD was the third leading killer of whites and the fifth leading killer of blacks at ages 55-64.

Percentage Distribution of Leading Causes of Death: Tennessee, 1996



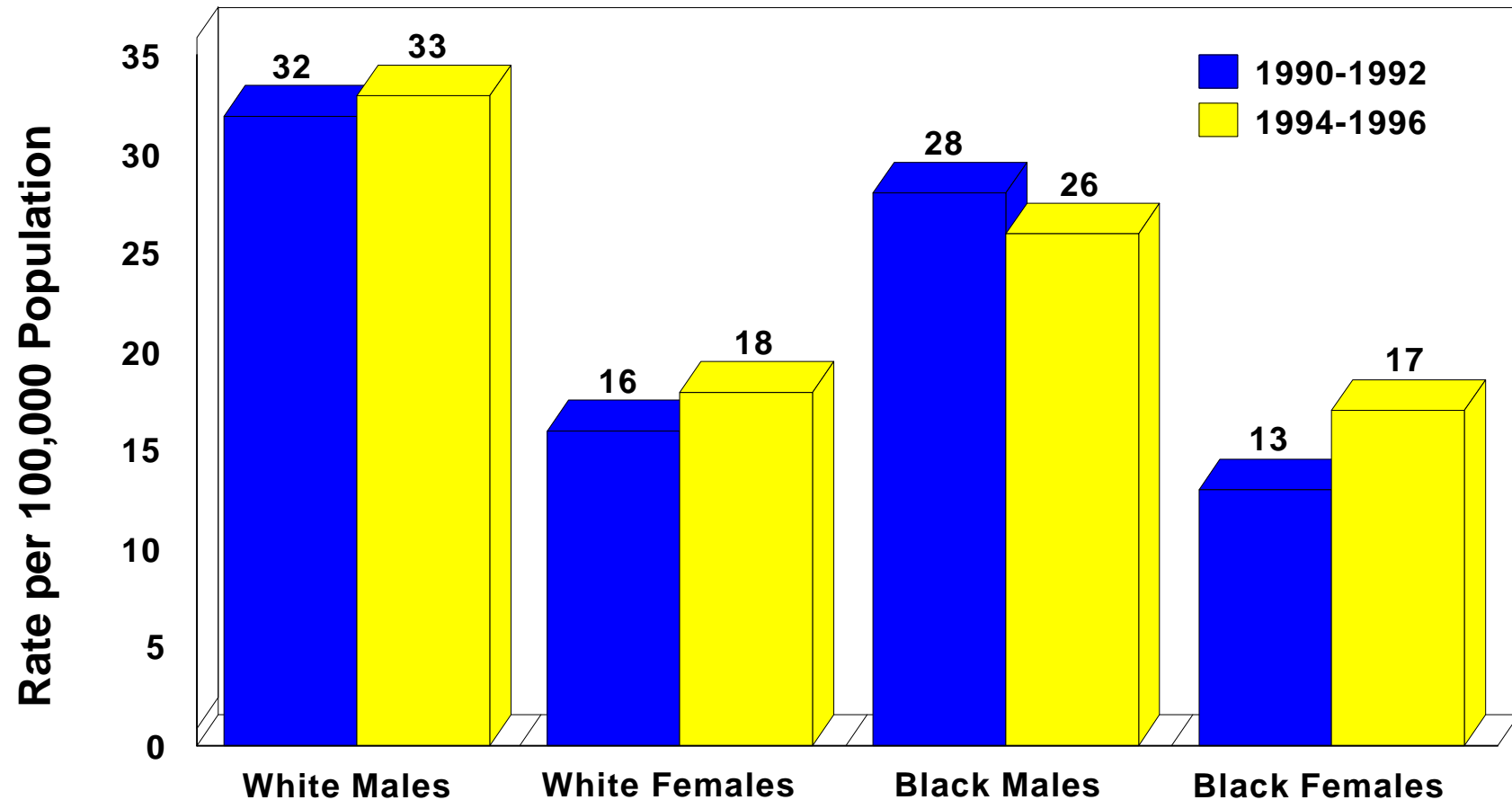
Source: Tennessee Department of Health,
Health Statistics and Information

Age-Adjusted Coronary Heart Disease Death Rates by Race and Sex: Tennessee, 1990-1992 and 1994-1996



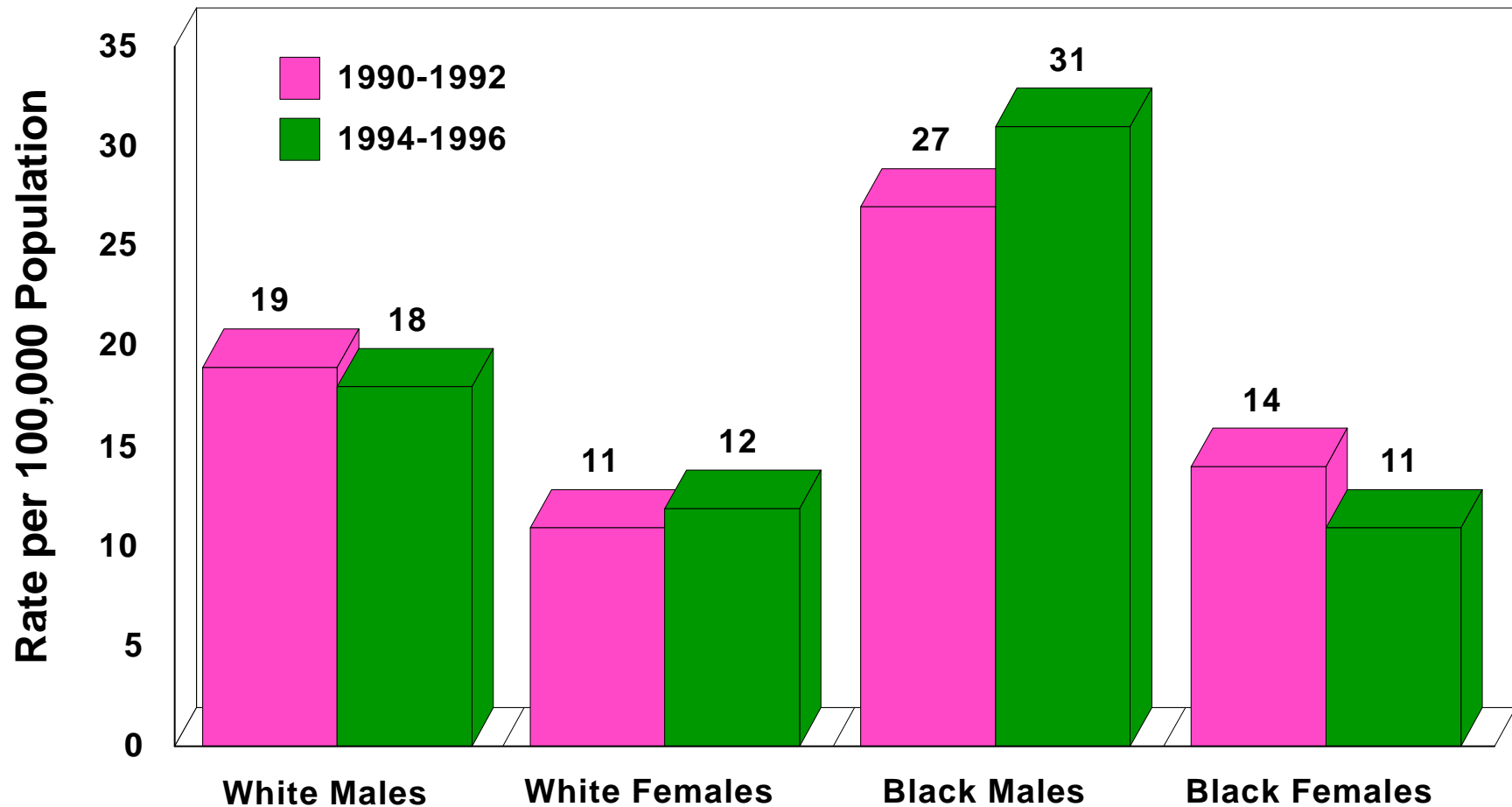
Source: Tennessee Department of Health
Health Statistics and Information

Age-Adjusted Chronic Obstructive Pulmonary Disease Death Rates by Race and Sex: Tennessee, 1990-1992 and 1994-1996



Source: Tennessee Department of Health
Health Statistics and Information

Age-Adjusted Pneumonia and Influenza Death Rates: Tennessee, 1990-1992 and 1994-1996



Source: Tennessee Department of Health
Health Statistics and Information

- In 1996 pneumonia and influenza ranked third as a cause of death among whites and fifth among blacks at ages 65 years and older.
- Diabetes ranked as the sixth leading cause of death among Tennesseans ages 45 years and older and seventh overall. It ranked fourth among blacks from ages 45 through 64, and fifth overall and at ages 65 and older. Diabetes ranked as the third leading cause of death among black females ages 45-64 and fourth overall. It ranked fourth for white females ages 55-64 and sixth at ages 65 years and older.

Infant/Neonatal/Postneonatal Mortality

- In 1996, the infant mortality rates for the total Tennessee population, whites and blacks, respectively, were 8.5, 6.7 and 15.4 per 1,000 live births. The rate for the United States population was 7.3. National target rates for infant mortality, established under the Year 2000 Objectives, are 7 per 1,000 live births for the total population and 11 for the black population.³
- The neonatal and postneonatal mortality rates in 1996 for Tennessee were 5.2 and 3.3 per 1,000 live births, respectively. Corresponding rates for whites were 4.2 and 2.5, and for blacks were 9.3 and 6.1. Year 2000 target rates for the total US population are 4.5 and 2.5 per 1,000 live births, respectively – and for blacks 7 and 4.²
- Hamilton County, a metropolitan region, was the region with the highest infant and postneonatal mortality rates in Tennessee in 1996. These rates were 12.6 and 5.2 per 1,000 live births, respectively. Shelby had the highest regional rate for neonatal mortality with 7.9 per 1,000 live births. It also had the second highest infant mortality rate with 12.3 per 1,000 live births. East Tennessee had the lowest rates of infant and neonatal mortality – 5.0 and 3.2, respectively. The Northeast Region, a nonmetropolitan region, had the lowest regional rate of postneonatal mortality, with 1.8 per 1,000 live births, closely followed by East Tennessee with 1.9.
- Comparison of infant mortality and postneonatal mortality rates for 1990-1992 and 1994-1996 reveal little or no change for the Tennessee population. The neonatal mortality rate for 1994-1996 was 5.3 per 1,000 live births, 13% lower than the 1990-1992 rate.
- In 1990-1992, the infant mortality rate for Tennessee was 9.9 compared to 8.9 in 1994-1996. Neonatal mortality rates were 6.1 in 1990-1992 and 5.3 in 1994-1996. Postneonatal mortality rates were 3.7 in 1990-1992 and 3.6 in 1994-1996.

³No Year 2000 Objectives are given for whites on these measures by CDC.

- The infant mortality rate for blacks declined by 3% between 1990-1992 and 1994-1996. Their 1994-1996 rate was 17.2 per 1,000 live births. A decline of 8.6% was also observed in their neonatal mortality rate. Their neonatal mortality rate for 1994-1996 was 10.7 per 1,000 live births. Their postneonatal mortality rate was 6.5 per 1,000 live births, an increase of 3% over the 1990-1992 rate.
- In descending rank order, the three leading causes of death for infants in Tennessee in 1996 were congenital anomalies, sudden infant death syndrome (SIDS), and disorders relating to short gestation and unspecified low birth weight. The same causes and ranking prevailed for white infants. In the case of black infants, the causes remained the same, but the rank order was reversed.
- For the period 1994-1996, the death rate among infants from congenital anomalies was 198 per 100,000 live births. This represents a decline of 8% from 1990-1992. The rate for SIDS declined by 20% to 133 per 100,000 live births. Yet, no such downward trend is evident in the death rate for disorders relating to short gestation and unspecified low birth weight. This rate remained virtually unchanged from 1990-1992 to 1994-1996 (115 versus 114).
- The death rate for black infants attributable to congenital anomalies declined by 8% from 1990-1992 to 1994-1996 (259 per 100,000 live births). This matched the decline in the rate for the State, and marginally exceeded the decline for white infants (6%). But the decline in the SIDS rate for blacks was just 4% (to 261 per 100,000 live births) or one-seventh the rate of decline registered for white infants in Tennessee.

Chronic Disease Mortality

- The age-adjusted coronary heart disease death rate for the Tennessee population declined 7% between 1990-1992 and 1994-1996 --from 135 per 100,000 population to 126. The national target rate established under the Year 2000 Healthy People Objectives is 100 per 100,000.⁴
- Blacks exhibited a decline of 8% in their age-adjusted coronary heart disease death rate -- from 180 per 100,000 to 167. The Year 2000 target rate for blacks nationally is 115 per 100,000.
- The age-adjusted cancer death rate for the Tennessee population decreased by 1% between 1990-1992 and 1994-1996. For the period 1994-1996, the rate was 138

⁴To examine changes in mortality rates and to stabilize the data, rates for the period 1990-1992 are compared with rates for the period 1994-1996. Annual rates are available in SPOT on the HIT Web site.

per 100,000 population. This compares with the Year 2000 target rate for the national population of 130 per 100,000.

- For Tennessee blacks, the age-adjusted cancer death rate declined 3% between 1990-1992 and 1994-1996. Their rate for 1994-1996 was 188 per 100,000 population. The corresponding Year 2000 target rate for the national black population is 175.
- Between 1990-1992 and 1994-1996, the age-adjusted death rate for stroke in the Tennessee population increased by 2%. The rate for 1994-1996 was 35 per 100,000 population. This compares with the Year 2000 target rate for the nation of 20 per 100,000.
- The age-adjusted stroke death rate for whites rose less than 1% between 1990-1992 and 1994-1996. However, the rate for blacks manifested a 10% increase. Their 1994-1996 rate was 62 per 100,000. This was more than double the rate for whites. The Year 2000 target rate for the black population is 27 per 100,000.

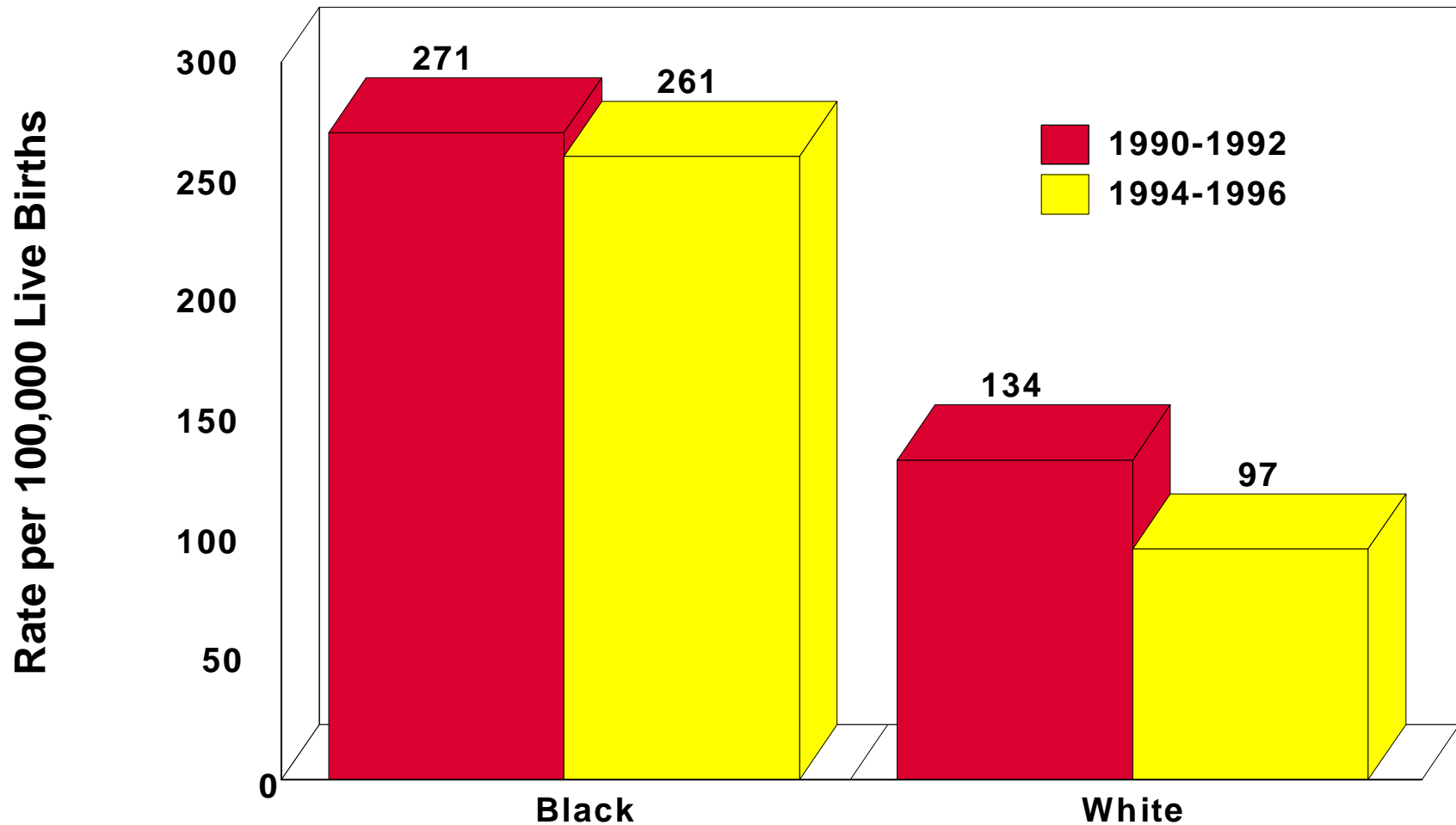
The Disease Burden in Tennessee, 1990- 1992 and 1994-1996

- The Global Burden of Disease Study⁵ is a joint project of the World Health Organization, World Bank, and Harvard University. In this study, causes of death are categorized under three broad groups: Group I comprises communicable diseases like HIV and tuberculosis; maternal causes; conditions arising in the perinatal period; and nutritional deficiencies. Group II comprises noncommunicable diseases like heart disease and cancer. Group III comprises injuries - both intentional and unintentional. Group I causes of death predominate at low levels of social economic development, as true for the United States in the past and many less developed countries today. Comparing Tennessee's population broken down by race and sex, using these three categories, could assist in health care planning and prioritizing.
- In Tennessee for the period 1994-1996, noncommunicable disease accounted for 89% of white female deaths, 86% of black female deaths, 84% of white male deaths, and 75% of black male deaths. Injuries were responsible for 13% of black male deaths, 10% of white male deaths, 5% of black female deaths, and 4% of white female deaths. The communicable disease category accounted for 12% of deaths among black males, 9% among black females, and 6% among both white males and females.

⁵C.J.L. Murray and A.D. Lopez, eds. The Global Burden of Disease, vol. I. (Cambridge, MA: Harvard University Press, 1996).

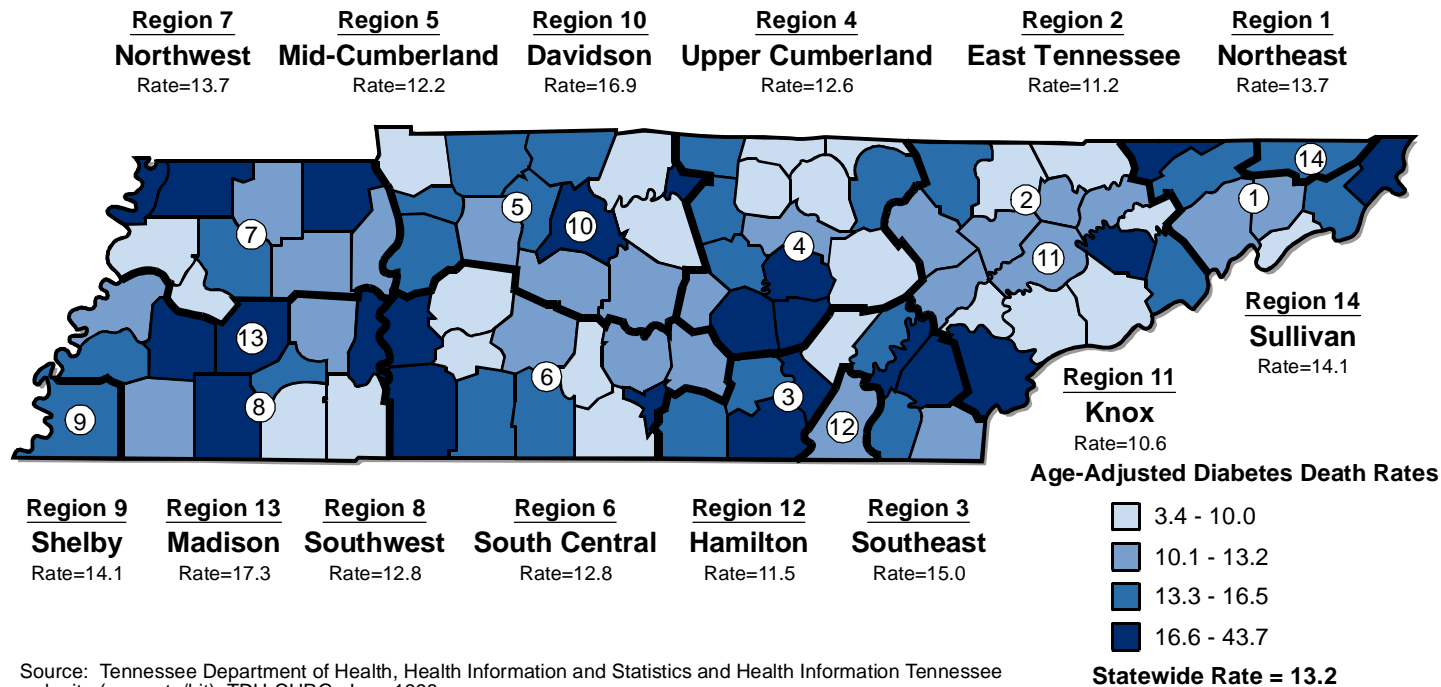
- For the period 1994-1996, black males had an age-adjusted noncommunicable disease death rate of 821 per 100,000 population. Corresponding rates for white males, black females, and white females were 538, 496, and 325, respectively. From 1990-1992, this rate declined 3% for white males and black females, and rose 2% for white females and 1% for black males.
- For 1994-1996, the age-adjusted injury death rate was 149 per 100,000 for black males, 92 for white males, 41 for black females, and 33 for white females. Since 1990-1992, there was a 21% increase in the rate for black females, a 6% increase for white females, and a 2% increase for white males. By contrast, the rate for black males declined 4%. The large rate increase for black females is explained by the 46 percent increase in their age-adjusted motor vehicle crash death rates between 1990-1992 and 1994-1996.
- For 1994-1996, the age-adjusted death rate for the communicable disease category was 114 per 100,000 population for black males. Corresponding rates for black females, white males, and white females were 50, 41, and 23, respectively. Since 1990-1992, the rate had declined 2% for white males. There were increases of 13% for black males, 8% for white females, and 3% for black females. The fact that the age-adjusted injury death rate declined as the corresponding communicable disease death rate rose among black males suggests that some males within this high risk group in 1994-1996 were dying of communicable disease instead of injury.

Rates of Sudden Infant Death Syndrome (SIDS) by Race: Tennessee, 1990-1992 and 1994-1996



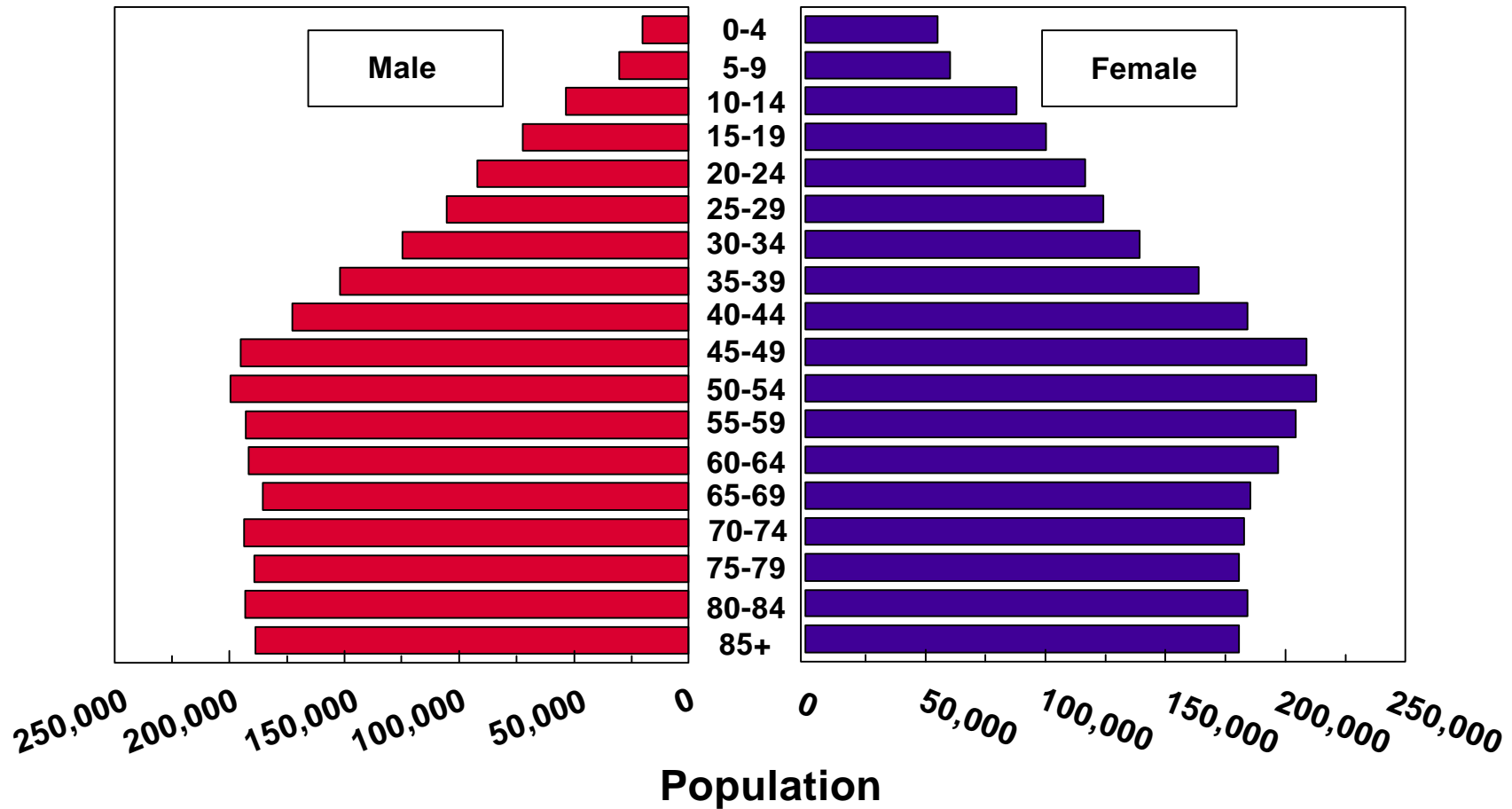
Source: Tennessee Department of Health
Health Statistics and Information

ANNUAL AVERAGE AGE-ADJUSTED DIABETES DEATH RATES PER 100,000 POPULATION BY COUNTY AND REGION, TENNESSEE, 1994-1996



Source: Tennessee Department of Health, Health Information and Statistics and Health Information Tennessee web site (server.to/hit), TDH-CHRG, June 1998.

Population by Age and Sex: Tennessee, 1996



Source: Tennessee Department of Health, Health Statistics and Information.

Note: For this pyramid the Tennessee age-specific population 85 years and older was redistributed into age-groups, 85-89, 90-94 and 95 and older according to proportions applied from the corresponding age-specific U.S. populations.

RANKING TENNESSEE'S HEALTH STATUS RELATIVE TO THE U.S., 1996⁶

- In 1996, Tennessee ranked 42nd among the states in the United States in overall “healthiness”.⁷ It ranked 35th in 1990. Tennessee was one of 34 states whose healthiness score dropped between 1995 and 1996, and was among 13 states showing a declining score between 1990 and 1996.
- Ranking first in “healthiness” in the 1996 report was Minnesota, followed by Utah, Hawaii, New Hampshire and Massachusetts. Ranking at the bottom of the scale were Louisiana (50th), Nevada and Mississippi (tied at 48th), West Virginia (47th), and South Carolina and New Mexico (45th).
- Between 1990 and 1996, Tennessee’s healthiness score declined by 2%. This contrasted with the 3.6% increase registered for the nation. Increase in risk for heart disease, high prevalence of smoking, and a decline in support for public health care are among the most common causes for declining state ranks overall.
- Tennessee’s healthiness score in 1996 was 11% below the average for all states combined. It was 5% below average in 1990 and 8% below in 1995.
- In 1996, Tennessee ranked close to or slightly above the national average in level of employment, infant survival, and availability of adequate prenatal care. Tennessee’s strengths were identified as low unemployment, a low infant mortality rate and adequate prenatal care relative to the U.S.
- Since the 1990 rankings, Tennessee, like New York, showed an increase of more than 6% in the prevalence of disease components of the healthiness measure.⁸ Tennessee increased faster than national averages on the three disease measures--heart disease, cancer and communicable disease.

⁶ReliaStar Financial Corporation in Minneapolis, Minnesota provides annual Health Rankings by State to allow comparisons of the overall “healthiness” of each state in the U.S. on a variety of indicators, such as lifestyle, access to health care services, occupational safety and disability, disease and mortality. The 1996 report was the 8th annual report in the series. Scores are the percent above or below the average health of all states, and comparing scores between states reflects the actual change that has occurred between years. Much of the data are for 1994 or earlier in the 1996 report.

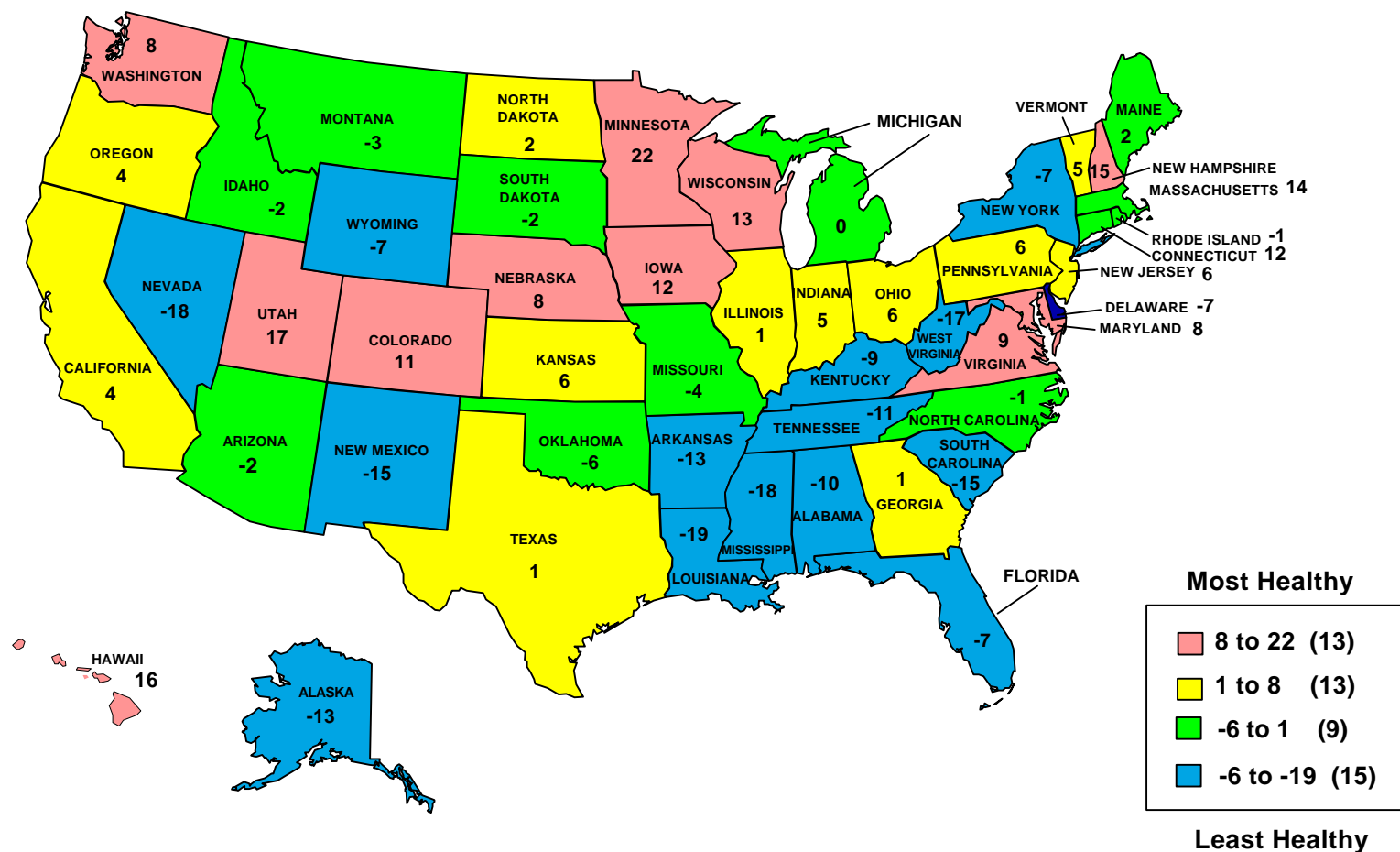
⁷Each year the ReliaStar Financial Corporation ranks states on an overall healthiness score. This score was a composite measure of 17 indicators incorporating such factors as mortality, morbidity, employment, education, occupational safety, and access to primary health care. A state’s score is the percent above or below the average health of all states in a given year or period.

⁸These components include heart disease measured using three-year average age- and race-adjusted death rates due to heart disease; cancer cases measured as the rate of projected cases of cancer per 100,000 population; and a three-year average of AIDS, tuberculosis and hepatitis cases to measure infectious disease.

- Death rates from heart disease, defined as race-adjusted death rates (1991-1993 data) were 163 per 100,000 for Tennessee and 150 per 100,000 for the U.S. Tennessee's heart disease death rate was thus 9% higher than that of the U.S. A combined measure, risk for heart disease in Tennessee (1993-1994 data) was 10% above the U.S. mean.⁹ Tennessee's heart disease risk was inflated by a hypertension prevalence that was 12% higher than for the U.S. (24.4% versus 21.7%), and a sedentary lifestyle prevalence that was 16% higher than for the U.S. (65.6% versus 56.5%). However, Tennessee's obesity prevalence was 11% lower (at 26.6% versus 30.1%) than that of the U.S. This deflated somewhat the risk of heart disease in Tennessee relative to the U.S.
- Tennessee had a 5% excess cancer case rate over the U.S. in 1996. Cancer incidence rates for 1996 were 549 per 100,000 population for Tennessee and 522 for the U.S.
- Communicable disease rates (1993-1995 data) revealed a large excess for Tennessee. Tennessee's rate of 73 cases per 100,000 was 34% above the U.S. average of 55 cases per 100,000. Communicable diseases here include AIDS, hepatitis and tuberculosis.
- Tennessee, along with New York and Wyoming, had the largest increase in reported communicable disease since the 1990 rankings - 40 more cases per 100,000.
- Smoking prevalence in Tennessee (1994 data) was 17% above the U.S. average (26.5% versus 22.6%); motor vehicular crash death rates (1994 data) were 28% above the U.S. average (2.3 per 1,000,000 miles compared to 1.8 for the U.S.); and violent crime (1994 data) was 4% above the U.S. mean (748 offenses per 100,000 compared to 716 for the U.S.).
- High school graduation rates (1993-1994 data) were 10% lower in Tennessee than in the U.S. (70.1%), while unemployment (1995 data) was slightly (4%) lower in Tennessee (5.2%) than in the U.S. (5.4%).
- Compared to the U.S., 75% of Tennessee's mothers received adequate prenatal care (1994 data), a level that was 3% higher than for the U.S. (73%).

⁹This risk component was the average of three measures from the BRFSS (1993-1994 data), viz., prevalence of hypertension, prevalence of sedentary lifestyle and prevalence of obesity.

Ranking Tennessee's Healthiness Relative to Other States in the United States, 1996



Note: A state's healthiness score is the percent above or below the average health of all states in a given year or period.
Source: The ReliaStar State Health Rankings: An Analysis of the Relative Healthiness of the Populations in All 50 States, 1996 Edition. ReliaStar Financial Corporation, Minneapolis, MN, 1998.

- Nearly 11% of Tennessee residents in 1996, compared to 10.5% of U.S. residents, lacked access to primary care (i.e. were underserved by primary care providers), a very slight difference.
- Support for public health care¹⁰ (1994-1995 data) was 11% lower in Tennessee than in the U.S. The index for Tennessee was 1.3 compared to 1.5 for the U.S.
- Comparison of occupational fatality rates (industry-adjusted, 1993-1995 data) suggests that Tennessee's prevalence of occupational fatalities was 16% higher at 5.1 per 100,000 workers than the U.S. prevalence of 4.4.
- Work status disability, defined as the percentage of people with a disability who are prevented from working, was 38% higher in Tennessee (5.8%) than the U.S. (4.2%).

Source: **The ReliaStar State Health Rankings: An Analysis of the Relative Healthiness of the Populations in All 50 States, 1996 Edition.** ReliaStar Financial Corporation, Minneapolis, Minnesota.

¹⁰Defined as an index with the percentage of a state's budget spent on welfare, health and hospitals divided by the percentage of the population with an annual income below \$15,000.

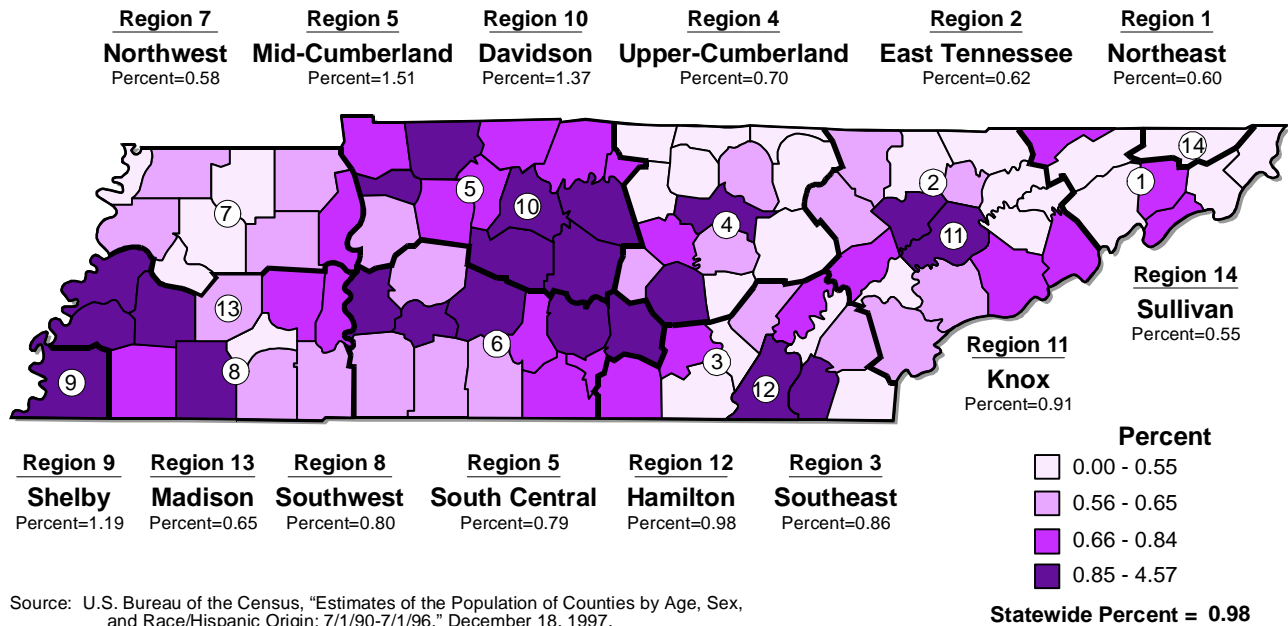
SPECIAL POPULATION SUBGROUPS: HEALTH AND HEALTH CARE ISSUES

Hispanics

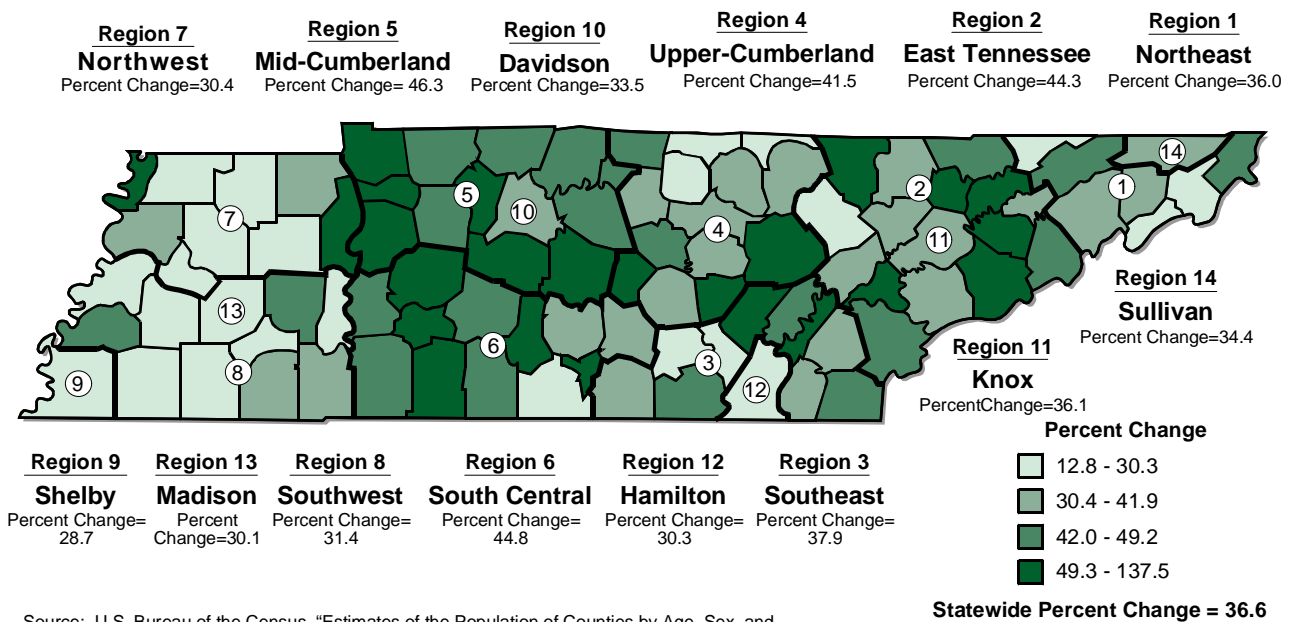
Demographic Changes

- The Hispanic population in Tennessee increased from 32,742 people in 1990 to an estimated 52,302 people in 1996, an increase of approximately 60%. This was a little more than six times Tennessee's overall population increase of 9% between 1990 and 1996.
- Overall, the greatest increase in Tennessee's Hispanic population between 1990 and 1996 occurred within the Mid-Cumberland Region, which also had the greatest overall increase in population between 1990 and 1996. The Mid-Cumberland Region had the highest percentage of Hispanics in 1996 compared to the other regions in Tennessee.
- The Hispanic population in Tennessee is projected to increase to 63,617 by the Year 2000. This represents a 93% increase over Tennessee's Hispanic population in 1990. The Hispanic population accounted for 0.7% of Tennessee's total population in 1990 and approximately 1.0% of Tennessee's total population in 1996. It is projected that the Hispanic population will account for 1.1% of Tennessee's total population by the Year 2000.
- The largest increase in Tennessee's Hispanic population between 1990 and 1996 occurred within the age-group 0-4 years old, a reflection of high fertility rates. Persons aged 65 years and older registered the smallest increase in population between 1990 and 1996. In 1996, the largest percentage (36.5%) of the Hispanic population was aged 25-44 years. The smallest percentage (4.3%) was among the elderly (65 years and older).
- The Hispanic male population increased by 57%, while the Hispanic female population rose 60% between 1990 and 1996. The South Central Region of Tennessee had the largest increase in male Hispanics between 1990 and 1996. The Mid-Cumberland Region of Tennessee registered the largest increase in female Hispanics between 1990 and 1996. Demand for agricultural laborers and service workers may underlie these trends.
- In 1996, the largest percentage of Hispanics in Tennessee's population was located in the Mid-Cumberland Region (1.5%) and in four of the metropolitan regions--Shelby, Hamilton, Davidson, and Knox Counties. Of the four metropolitan regions, Davidson County had the largest percentage of Hispanics (1.4%).

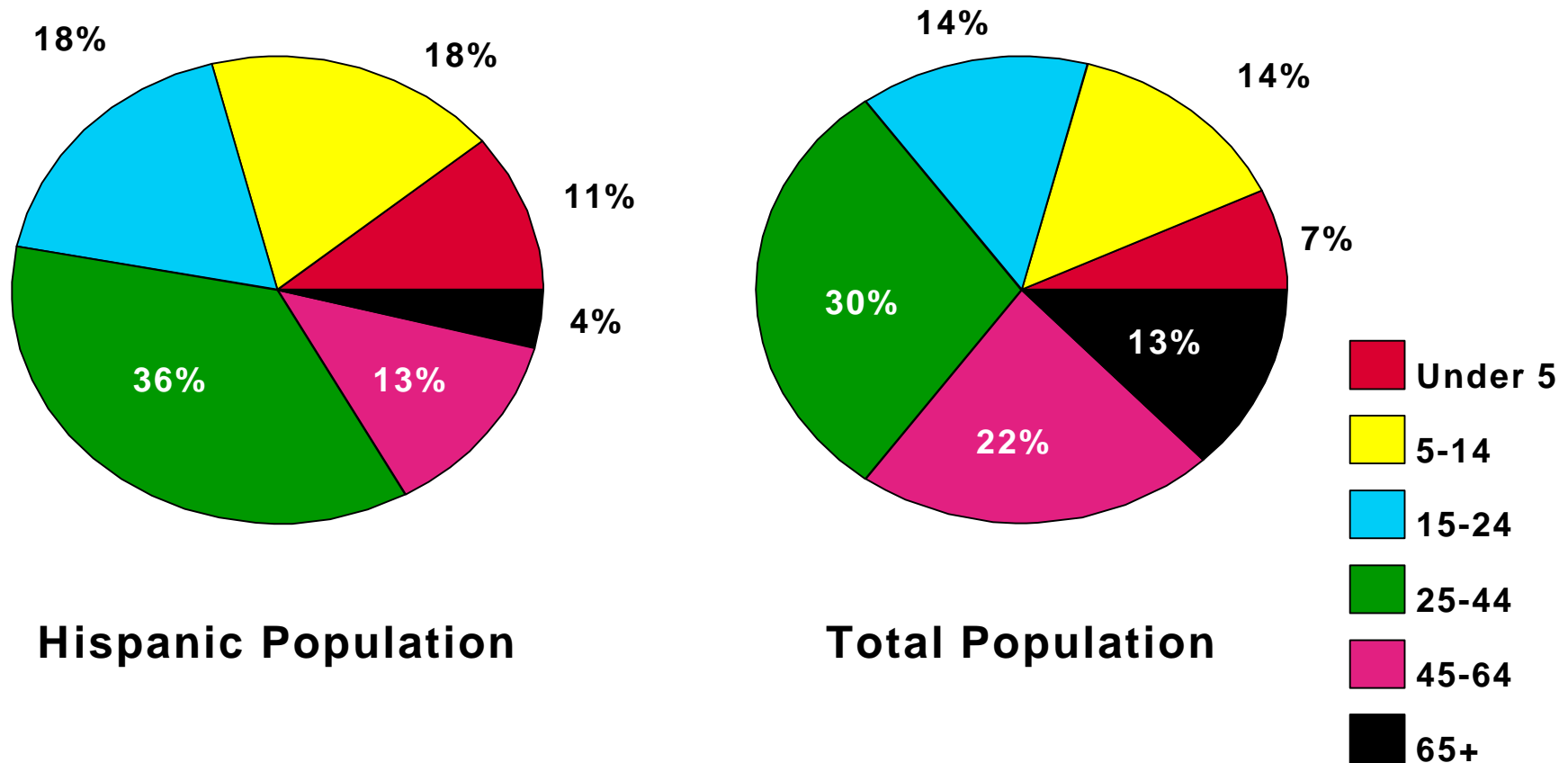
PERCENT OF HISPANICS IN THE TOTAL POPULATION BY COUNTY AND REGION, TENNESSEE, 1996



PERCENT CHANGE IN HISPANIC POPULATION BY COUNTY AND REGION, TENNESSEE: 1990-1992 TO 1994-1996

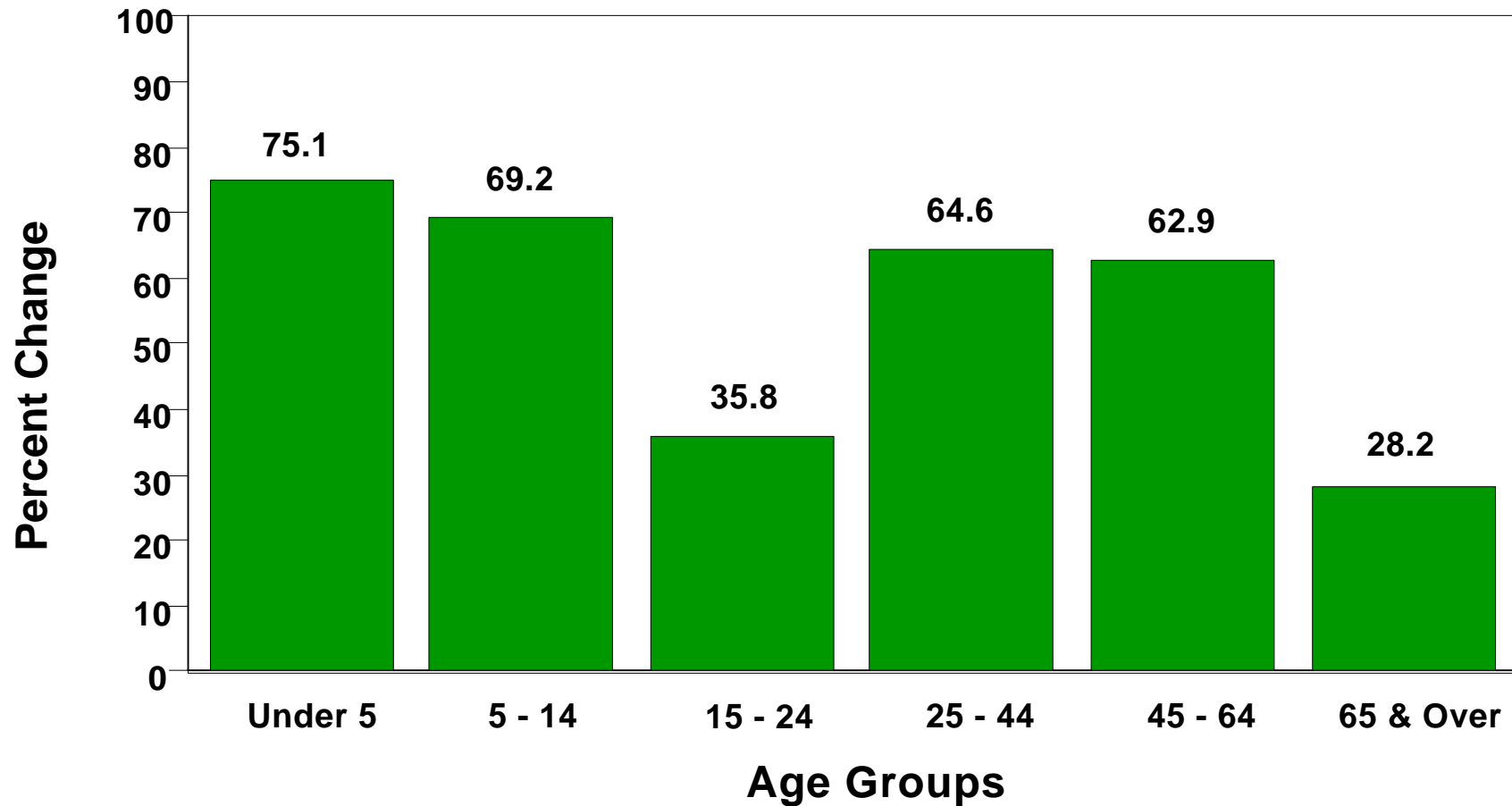


Comparison of the Hispanic and Total Population of Tennessee by Age, 1996



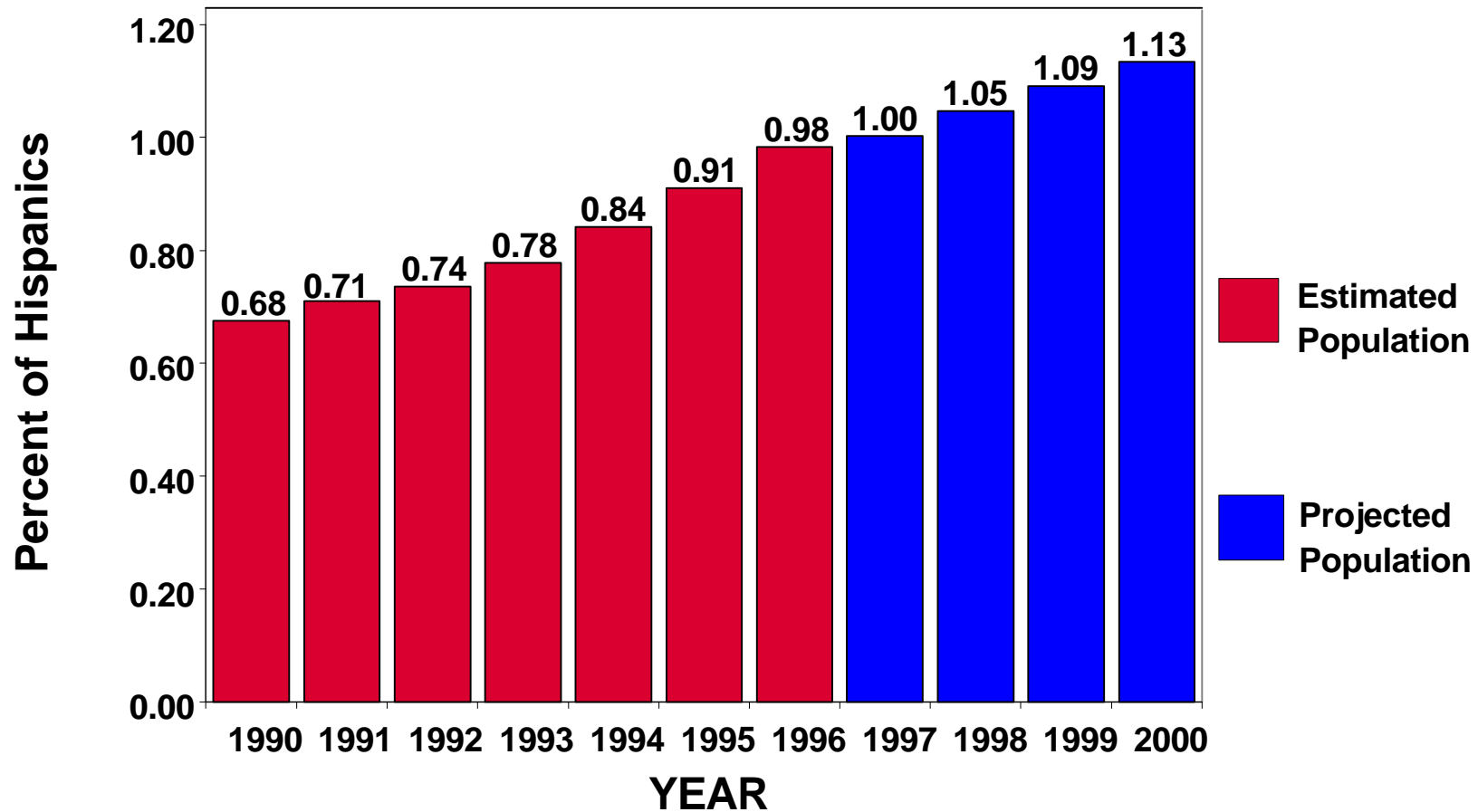
Source: U.S. Bureau of the Census, Estimates of the Population of Counties by Age, Sex, and Race/Hispanic Origin: 1990 to 1996, 12/97; TDH 6/98

Percent Change in Tennessee's Hispanic Population Between 1990 and 1996



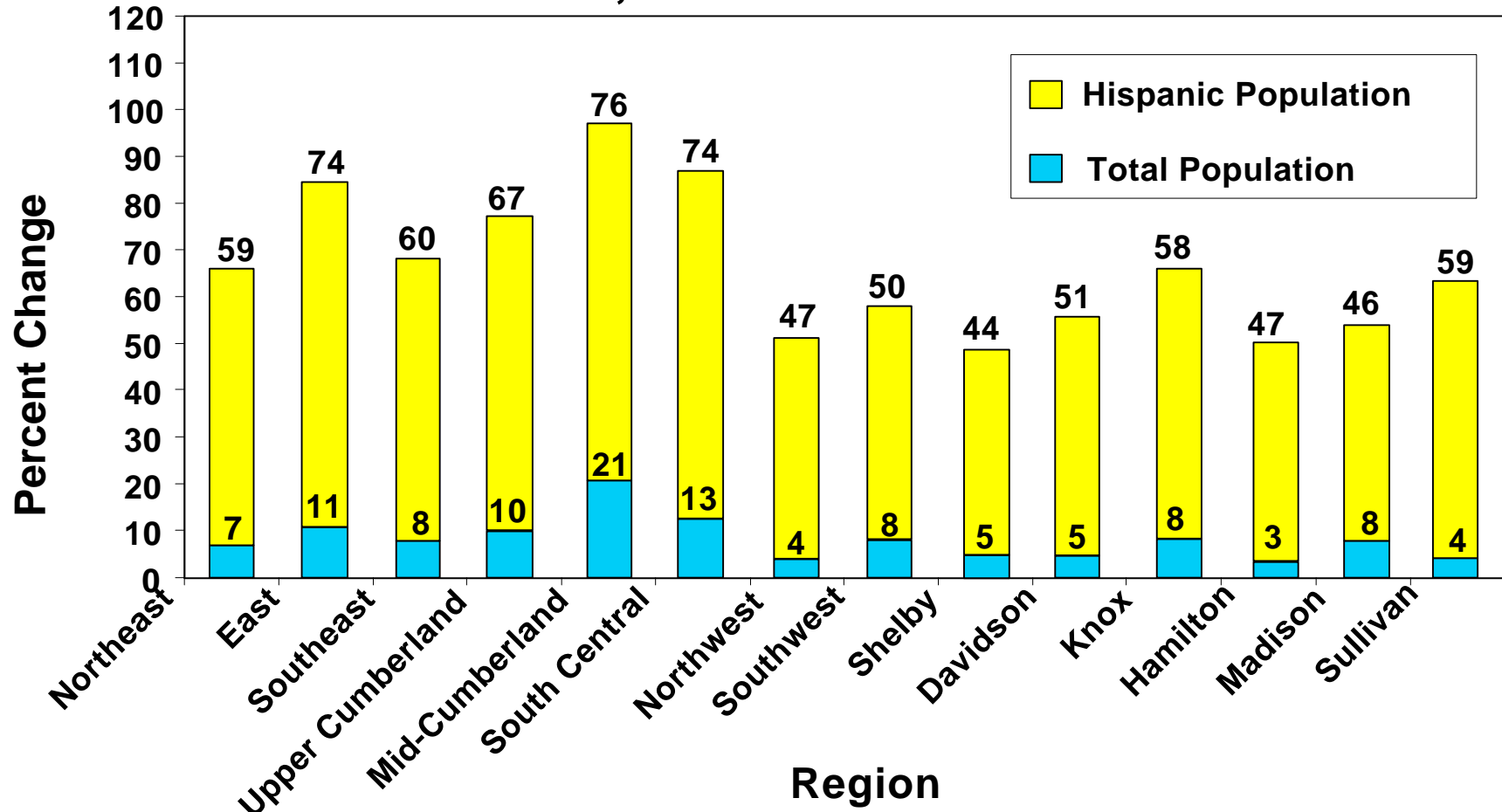
Source: U.S. Bureau of the Census, "Estimates of the Population of Counties by Age, Sex, and Race/Hispanic Origin: 1990-1996," December 1997.

Percentage Hispanics in the Tennessee Population: 1990 - 2000¹



¹Projected population calculated from linear regression techniques based on the estimated population.
Source of estimated population: U.S. Bureau of the Census, "Estimates of the Population of Counties by Age, Sex, Race and Hispanic Origin: 1990 to 1996" (December 1997).

Percent Change in Hispanic Population Compared to Percent Change in Total Population by Region: Tennessee, Between 1990 and 1996



Source: U.S. Bureau of the Census, "Estimates of the Population of Counties by Age, Sex, Race/Hispanic Origin: 1990 to 1996" (December 1997).

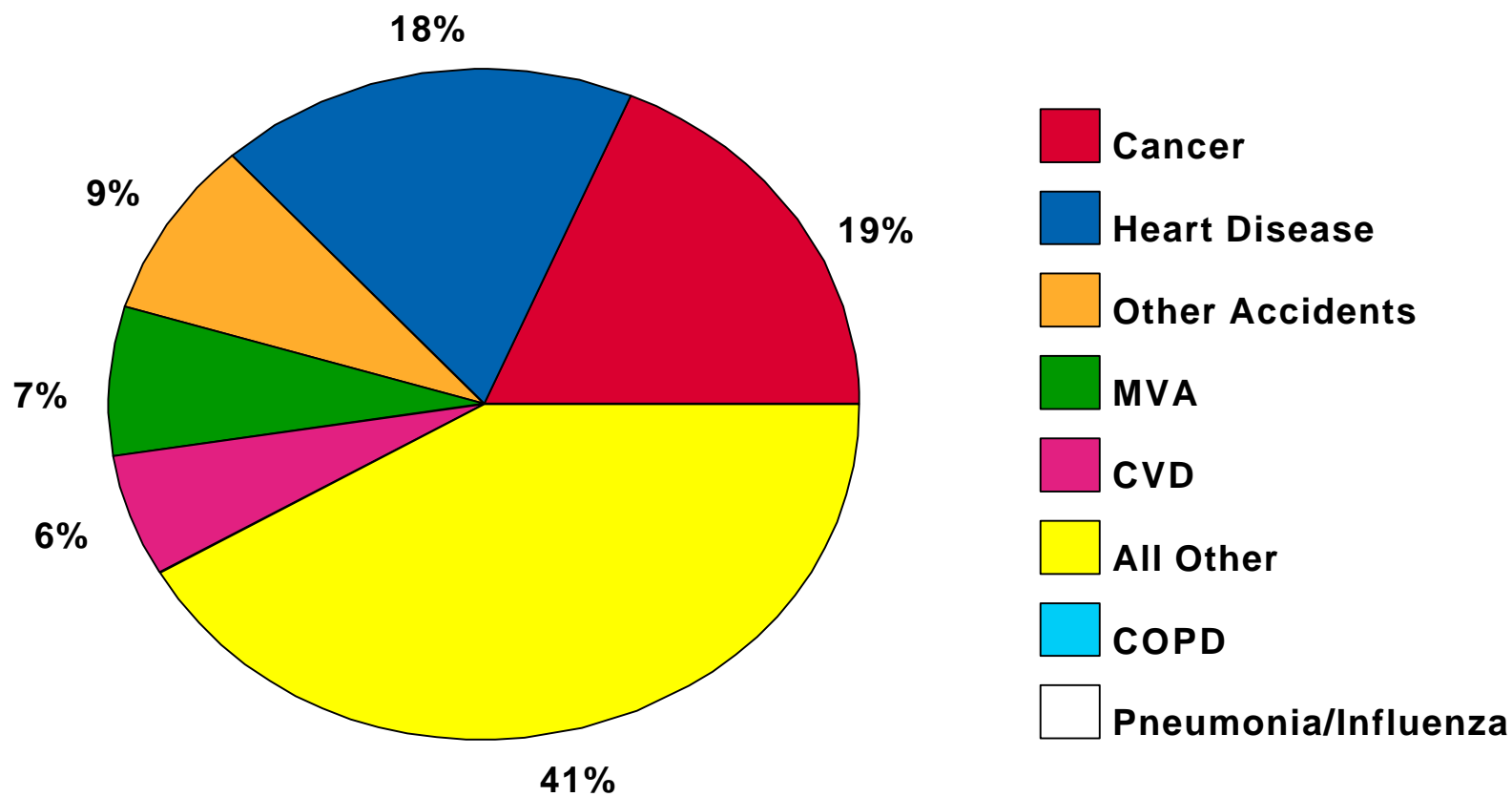
- The percent change in the Hispanic population between 1990-1992 and 1994-1996 was greatest in the Mid-Cumberland, South Central, and East Regions of Tennessee. Also, counties in the lower part of the Upper Cumberland Region and the upper part of the Southeast Region experienced large increases. While the metropolitan regions had a larger percentage of Hispanics in 1996, the percentage increase in Hispanics in these areas was not as high as for rural regions, which had a smaller base.

Source: U.S. Census Bureau, Estimates of the Population of Counties by Age, Sex, and Race/Hispanic Origin: 1990 to 1996, as of December 18, 1997.

Mortality of Hispanics in Tennessee, 1996

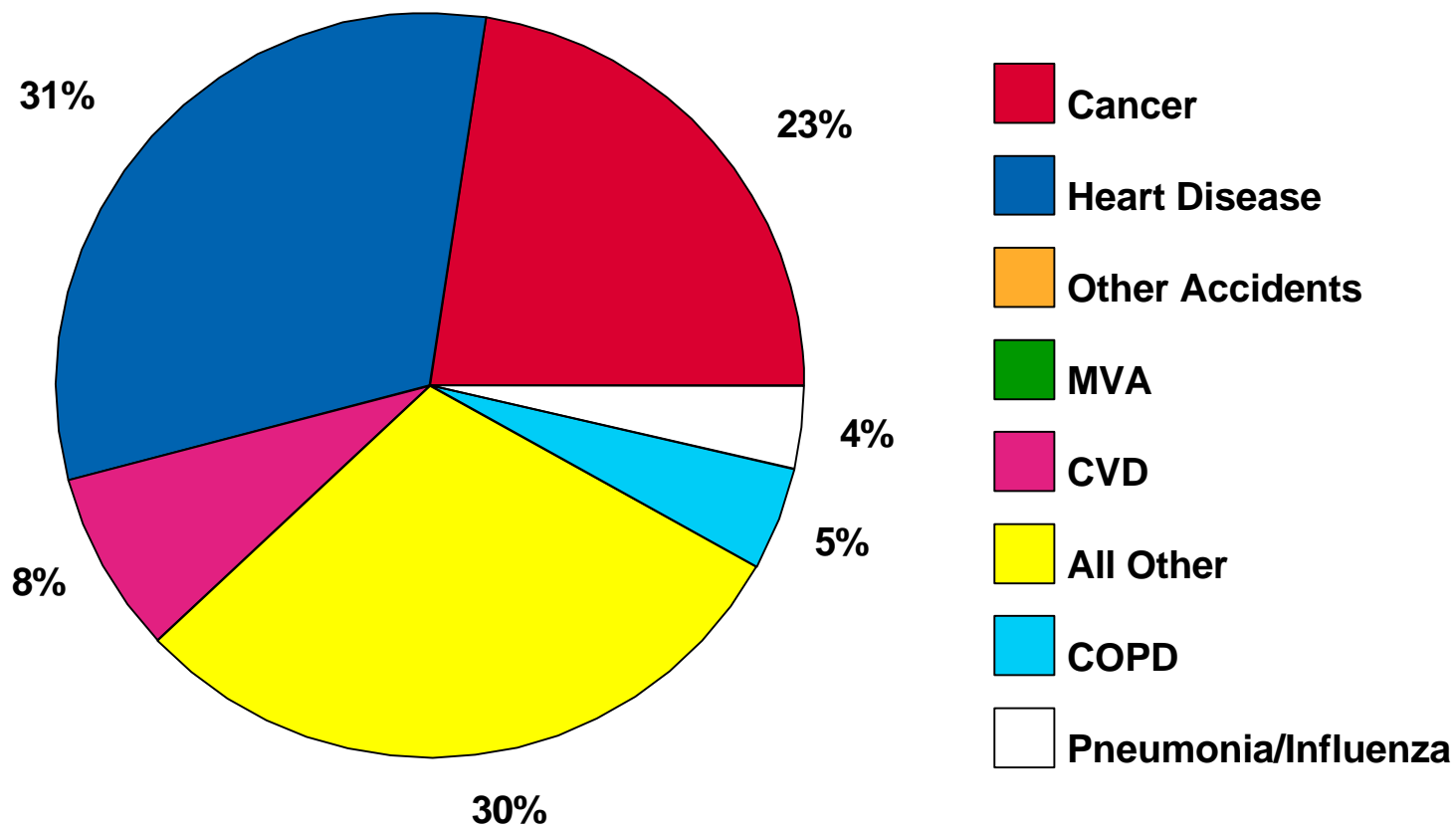
- A total of 221 deaths to Hispanics were reported among the 51,367 deaths in Tennessee in 1996. Deaths to Hispanics represented less than one-half of one percent (0.4%) of all deaths in the State in 1996. The mortality rate among Hispanics was 422.5 per 100,000 in 1996.
- In two-thirds of the deaths to Hispanics, their country of origin was known (n=146). The majority of these deaths occurred to persons of Mexican origin - 46%, Puerto Ricans --19%, Spaniards - 16%, Cubans - 11%, and Central/South Americans - 8%.
- Of deaths to Hispanics in 1996 in Tennessee, 61.5% occurred to males and 38.5% to females.
- The majority of Hispanic decedents in 1996 were white at 78%, followed by Asians and other races at 10%, blacks at 8%, and persons of unknown race at 4%.
- Sixteen percent of Hispanic decedents were under 25 (7% were 0-1, 1% were 1-4 years, none were 5-14, and 8% were 15-24). Sixteen percent were aged 25-44 (7% were 25-34 and 9% were 35-44). Twenty-one percent died between the ages of 45 and 64 (11% were 45-54; 10% were 55-64). Forty-seven percent of Hispanic decedents were aged 65 and over. Fifteen percent were 65-74; 20% were 75-84; and 12% were 85 and over.
- Leading causes of death among Hispanics in 1996 were cancer at 19% of deaths; heart disease at 18%; accidents other than motor vehicle accidents (MVA's) - 9%, MVA's - 7%; and cerebrovascular disease (CVD) - 6%. HIV/AIDS and suicide each made up 3% of deaths to Hispanics, while diabetes, pneumonia/influenza, and homicide each accounted for 2% of Hispanic deaths.

Leading Causes of Death among Hispanics in Tennessee, 1996



Source: Tennessee Mortality Data, 1996
Tennessee Department of Health

Leading Causes of Death among Tennesseans, All Racial/Ethnic Groups, 1996



Source: Tennessee Mortality Data, 1996
Tennessee Department of Health

Morbidity of Hispanic Adults in Tennessee, 1993

- Hispanic adults represented about 1% of adults 18 years of age and over in the Tennessee Alcohol and Other Drug Needs Assessment Survey of 1993 (79 out of a total sample size of 7,948). About 1% of adults aged 20 and over in Tennessee were Hispanic in 1996 (32,881 Hispanics out of 3,826,384 adults aged 20+).
- Fair or poor health was less likely to be reported by Hispanic adults (14%) than other adults (19%) in 1993. The former were somewhat more likely to report being disabled or functionally impaired (15% compared to 13% of non-Hispanic adults).
- Non-Hispanic females had the highest prevalence of fair or poor health (20%), while Hispanic females had the lowest prevalence (12.5%). The prevalence of fair or poor health was 16% among males regardless of Hispanic origin.
- Hispanic females had the highest prevalence of disability (19%), followed by non-Hispanic females (14%), then non-Hispanic males (11.5%). Hispanic males (10%) had the lowest prevalence of disability based on self-report.
- Similar percentages of Hispanics (13%) and non-Hispanics (12%) were hospitalized in the 12 months prior to the survey. A somewhat lower percentage of Hispanics had visited a physician (65% versus 70% of non-Hispanics) or used an emergency room in the past 12 months (18% of Hispanics and 20% of non-Hispanics).
- Hispanic adults were somewhat less likely than other adults (18% versus 22%) to report serious injury requiring medical care.
- Hispanic adults were twice as likely as non-Hispanic adults (12% versus 6%) to report having been diagnosed with or treated for diabetes.
- The prevalence of diabetes was substantially higher among Hispanic females than any other sex-race groups. Fifteen percent of Hispanic females, compared to 6% of non-Hispanic females, 8% of Hispanic males, and 6% of non-Hispanic males, reported ever being diagnosed with or treated for diabetes.
- Hypertension was more prevalent among Hispanic adults, at 30% compared to 25% of non-Hispanics.
- Hispanic males were at excess risk for hypertension. The prevalence of hypertension was 39% among Hispanic males, 19% among other males, and 25% and 28% among Hispanic females and non-Hispanic females, respectively.

- Despite their increased risk of diabetes and hypertension, Hispanics were significantly more likely than non-Hispanics to lack health insurance in 1993. The former were twice as likely to lack health insurance as the latter. Twenty-two percent of the former compared to 13% of the latter were uninsured.
- Hispanic males were most likely to lack health insurance, at 29%, followed by Hispanic and non-Hispanic females (17% and 12%, respectively). Non-Hispanic males had the lowest prevalence of lack of health insurance of any sex-race group in 1993 at 14.5%.
- Hispanic males were the most likely group to lack a regular source of medical care at 23%, followed by non-Hispanic males at 21%. Hispanic females were less likely to lack a regular care source (15%) than other adult females (11%).
- Yet Hispanic adults were no more likely to be unemployed or to report low incomes than other adults. Twenty-nine percent of Hispanics, compared to 27% of non-Hispanics, were unemployed, while 12% of Hispanics and 17% of non-Hispanics reported annual average household incomes of \$10,000 or less, defined as poverty level in this survey.¹¹
- Hispanic adults were significantly more likely to have recently drunk alcoholic beverages (in the past 12 months) than other adults (60% of the former compared to 43% of the latter were recent drinkers).
- A significantly higher percentage of Hispanics reported being concerned about parental alcohol or other drug (AOD) abuse (13%) compared to their non-Hispanic counterparts (7%), a risk factor for personal alcohol abuse or dependence.
- A higher percentage of Hispanic than non-Hispanic adults reported a current addiction to AOD (4.3% versus 2.5%, respectively). A higher percentage of Hispanics had received formal AOD treatment (5.1% compared to 2.1% among other adults).
- Need for AOD treatment was conservatively indicated by the percentage of adults who reported lifetime AOD addiction and were still using alcohol and/or other drugs. This treatment need was assessed as higher for Hispanic than non-Hispanic adults. Nine percent of Hispanics and 6% of non-Hispanics reported addiction coupled with recent AOD use. The treatment gap was defined as the difference between the percentage needing treatment and the percentage having received it. For both Hispanics and non-Hispanics, the gap in AOD treatment need was 4% of adults, a lower limit estimate.

¹¹Hispanic migrant workers may have been missed disproportionately in this random digit dial household survey to the extent that they lacked telephones or were residing in group quarters.

The Health Status of Hispanic Youth in Tennessee, 1995/1997¹²

- Two percent of high school students in Tennessee were of Hispanic origin in 1995/1997.
- Counties with the highest proportions of Hispanic high school students included Hancock (4.6%), Crockett (3.8%), Van Buren (3.7%), Bedford (3.5%), and Giles (3.3%). Counties with the lowest prevalence of Hispanic high school students were Moore (0.4%), Smith (0.5%), Marion (0.8%), and Benton (0.9%) Counties.
- Two metropolitan regions, Davidson and Shelby, had the highest regional prevalence of Hispanic students (2.8% and 2.6%, respectively), while the Northwest Region had the lowest prevalence (1.5%).
- Of these youth, 56% were white; 21% were black; 7% were Asian, and 22% were of other races. This contrasts with non-Hispanic students, 83% of whom were white, 15% black, 1% Asian, and 1% of other races.
- Hispanic and other students did not differ by age, but a somewhat higher percentage of Hispanic students were male (59%), compared to non-Hispanic students (48%).
- Hispanic students were more likely to be poor (i.e. come from families receiving public assistance or welfare including WIC, food stamps, AFDC, or TennCare) than other students (18% compared to 11%, respectively).
- Hispanic students were less likely to come from two-parent families - 54% versus 70% of non-Hispanic students.
- Compared to their non-Hispanic counterparts, Hispanic youth were also more likely to have unemployed fathers (12% versus 6%); employed mothers (39% versus 33%); fathers with less than a high school education (30% versus 20%); and mothers with less than a high school diploma (28% versus 17%).
- Hispanic youth were more likely to report being homeless (2.6%) compared to non-Hispanic youth (0.1%).
- Religiosity differed by Hispanic origin. A higher percentage of Hispanic students were not very or not at all religious than other students (6.9% versus 3.6%).

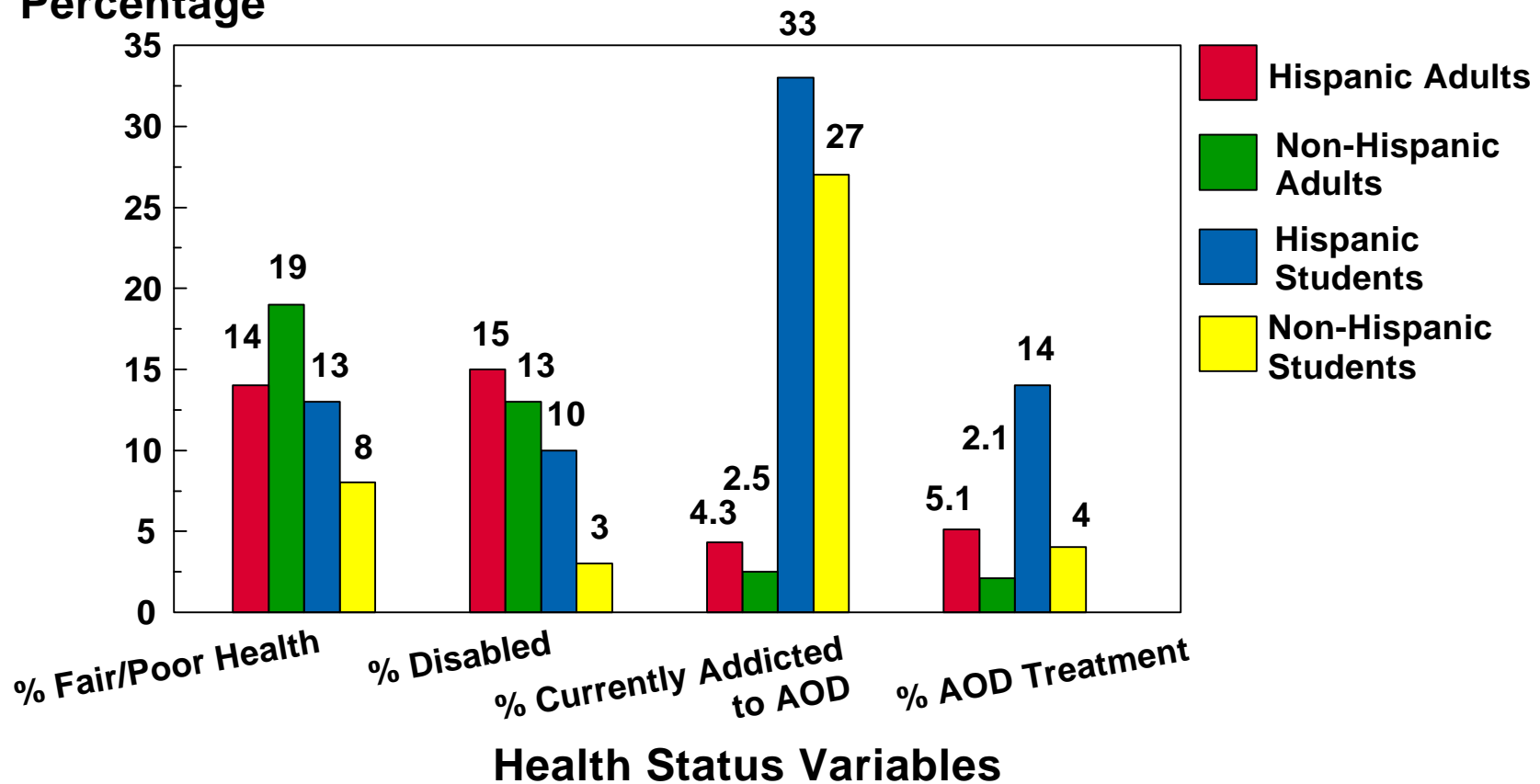
¹²Due to differences in sampling design and study protocol, data will differ despite similar questions in the YRBSS for 1995 and 1997 and the TN ATOD High School Survey 1995/1997.

- Hispanic youth were more likely to have excess risk of early school leaving and related school problems. Compared to non-Hispanics, they were more likely to:
 - have a low GPA (16% versus 7%);
 - lack parental supervision (66% versus 57%);
 - have a poor attitude to school (38% versus 23%);
 - have been suspended or expelled from school at least once in the past (34% versus 20%);
 - have friends who had dropped out of school (7.6% versus 1.9%); and
 - have high rates of school absenteeism (16% versus 5%);
- Thirteen percent of Hispanic students, compared to 8% of other students, reported their health as fair or poor. Disability or functional impairment was three times more frequently reported by Hispanic youth (10%) than other youth (3%).
- Nearly twice the proportion of Hispanics (18.5%) were disabled or in fair or poor health compared to other students (10%).
- Injury in fights and physical abuse and assault were more prevalent among Hispanic youth. Fight injuries in the 12 months prior to the survey were reported by 8% of non-Hispanics and 14% of Hispanics, the same relative percentages who reported physical abuse and assault in the same time period. Overall, injury related to physical fights, assaults, and abuse was more common among Hispanic students (21%) than non-Hispanic students (13%).
- Alcohol and other drug use and abuse were more prevalent among students of Hispanic origin. Thus,
 - 81% of Hispanic students and 74% of non-Hispanic students had ever drunk alcoholic beverages;
 - 29% of the former compared to 21% of the latter had ever abused prescription drugs (i.e., used them for non-medical purposes); and
 - 51% of Hispanics and 43% of non-Hispanics had used one or more illegal drugs in their lives.
- Lifetime prevalence of tobacco use also varied by Hispanic origin, with 72% of Hispanics and 68% of other youth reporting ever smoking cigarettes or using smokeless tobacco.
- Forty percent of Hispanic and 33% of non-Hispanic students said they had been addicted to a drug or substance in the past, while 33% of the former and 27% of the latter reported current addiction. Thus, 18% of both Hispanics and non-Hispanics who had been addicted to AOD were no longer addicted.

- Yet, a much higher percentage of Hispanic students had received formal AOD treatment (14% versus 4% of other students) and participated in self-help or 12-step groups (18% versus 7% of other students).
- No more Hispanics than other students reported concern about parental AOD abuse or problems (35%-38%) or friends' AOD abuse or problems (53%-49%).
- Suicide attempts were nearly twice as frequently reported by Hispanic students at 23%, compared to 13% of other students. Twice the proportion of Hispanic suicide attempters used AOD before attempting suicide than did other students who attempted suicide (14%).
- Often or always feeling depressed was twice as common among Hispanic youth (10%) than others (5%), and the former were more than twice as likely to have ever received mental health or psychiatric treatment (18%) than the latter (8%).
- A higher percentage of Hispanic students carried weapons in the 12 months prior to the survey, 27% versus 19% of non-Hispanic students.
- A higher percentage of Hispanic students reported negative consequences of AOD abuse and life problems associated with drinking alcohol or using other drugs.
 - Nearly half (47%) of Hispanic youth, compared to 42% of other youth, reported one or more AOD-related problems in their lives, e.g., 24% of the former had gotten into fights or arguments because of AOD compared to 18% of the latter; and 26% of the former and 20% of the latter had had sex associated with AOD use.
- Hispanic students were more likely to participate in illegal activities surrounding drug use.
 - Seventeen percent of Hispanic students had stolen drugs in the 12 months prior to the survey, and 31% had used or bought illegal drugs in that period. Among non-Hispanic students, the relevant percentages were 7% and 20%, respectively.
 - Compared to 5% of non-Hispanic students, 10% of Hispanics had been arrested or held at a police station for other offenses than DUI or drug sales or possession. Five percent of Hispanics had been arrested for DUI and 6% for other drug offenses, compared to 1% and 2% of other students, respectively.

Comparison of Tennessee Adults and High School Students' Health and Disability Status, Addiction and AOD Treatment Receipt, 1993/95/97

Percentage



Source: Tennessee ATOD High School Survey, 1995/1997, and Tennessee Adult Household AOD Needs Assessment Survey, 1993, CHR and TDH.

SUMMARY:

Hispanic students attending high school in Tennessee in 1995/1997 were at excess risk for a range of behaviors that are precursors to early school leaving; alcohol, tobacco and other drug abuse and dependence; suicide attempts; depression and other mental health problems; as well as physical illness, injury, and disability. Hispanic students were more likely to have received both mental health and AOD treatment, although their recovery rates were similar to non-Hispanics' rates (18% of those ever addicted to AOD were no longer addicted). Other health risk factors were higher among Hispanic students including socioeconomic and familial factors that may negatively impact both their health and future employment and educational opportunities.

Source: Tennessee ATOD High School Survey, 1995/1997. CHRG-TDH. Data are also available on the CHRG-TDH Health Information Tennessee (HIT) Web site at server.to/hit.

Health Status of African-Americans in Tennessee¹³

Homicide and Diabetes -- Issues in Blacks' Mortality and Morbidity Experience in Tennessee

- Homicide was the fourth leading cause of death for black males in Tennessee, and did not figure among the top five causes of death for white males. The age-adjusted homicide death rate for black males was 66 per 100,000 in 1996 compared to 8 among white males. This represents an eight-fold excess in male homicide rates among blacks in Tennessee. Black females also had higher age-adjusted homicide death rates (11 per 100,000) than their white counterparts (3 per 100,000) by nearly four times.
- Young black males were at particularly high risk for homicide compared to young white males. Among 15-19 year-olds, homicide rates were 14 times higher among black than white males at 116 compared to 8, respectively in 1996.
- Young black females had homicide rates that were more than double those of white females ages 15-19 (11 versus 5) in 1996.
- Homicide risk factor profiles differed by race among male high school students in Tennessee. More black male high school students were involved in gang fights in the past 12 months than white male students. Similar proportions of black and white male students carried weapons in the past 12 months. A higher percentage of black students reported having sold illegal drugs in the past 12 months, while a higher percentage of white male students reported having fights or arguments because of using alcohol or other drugs.
- "Other infectious and parasitic diseases" is a cause of death category composed very largely of HIV/AIDS deaths, and is used as a proxy for such deaths. In 1996, HIV/AIDS was the sixth leading cause of death for black males at 52 per 100,000 compared to 10 per 100,000 for white males, more than a five-fold difference.
- HIV/AIDS age-adjusted death rates were five times higher among black females than white females at 10 compared to 2 per 100,000, respectively.

¹³Following the model of the U.S. Census and CDC, the terms "black" and "white" are used in this report for comparability.

- Among whites, age-adjusted HIV/AIDS death rates rose 40% from 4 per 100,000 in 1990-1992 to 5.6 per 100,000 in 1994-1996. The corresponding death rate among blacks increased 173%, from 9.8 per 100,000 in 1990-1992 to 26.8 per 100,000 in 1994-1996.
 - A much larger increase in the rate of HIV/AIDS deaths was observed for black males than white males. Age-adjusted death rates among the former increased 163% from 19 per 100,000 in 1990-1992 to 50 per 100,000 in 1994-1996. Among white males, rates increased 32% from 7.7 per 100,000 in 1990-1992 to 10.2 per 100,000 in 1994-1996.
 - The age-adjusted HIV/AIDS death rate among black females was 2.6 per 100,000 in 1990-1992, compared with 8.5 per 100,000 in the 1994-1996 reporting period, an increase of 227%. The rate for white females was 1 per 100,000 in 1994-1996, a 150% increase over the 1990-1992 rate of 0.4.
- A leading cause of death in 1996 among blacks was diabetes. Diabetes ranked in the five leading causes of death for black females alone, while COPD was ranked among the five leading causes of death for white females alone. The age-adjusted diabetes death rate among black females was 32, compared to 11 for white females, 27 for black males, and 12 for white males. Excess diabetes death rates among elderly blacks were observed. Diabetes death rates among black females aged 65 and older were 281, compared to 118 among their white counterparts. For elderly black males, diabetes death rates were 210; for elderly white males, 113 per 100,000.
- Considering diabetes morbidity, a higher percentage of black females (10%) in Tennessee in 1993 was diagnosed with diabetes than white females (6%).
- Poor black females were 63% more likely than nonpoor black females to report being diabetic in 1993.

Source: Tennessee Mortality Data, TDH, 1996. Tennessee Alcohol, Tobacco and Drug High School Survey, 1995-1997, CHRG-TDH. Tennessee AOD Adult Needs Assessment Survey, 1993, CHRG-TDH.

The Health Status of Adult and Juvenile Arrestees, Tennessee, 1996-1997

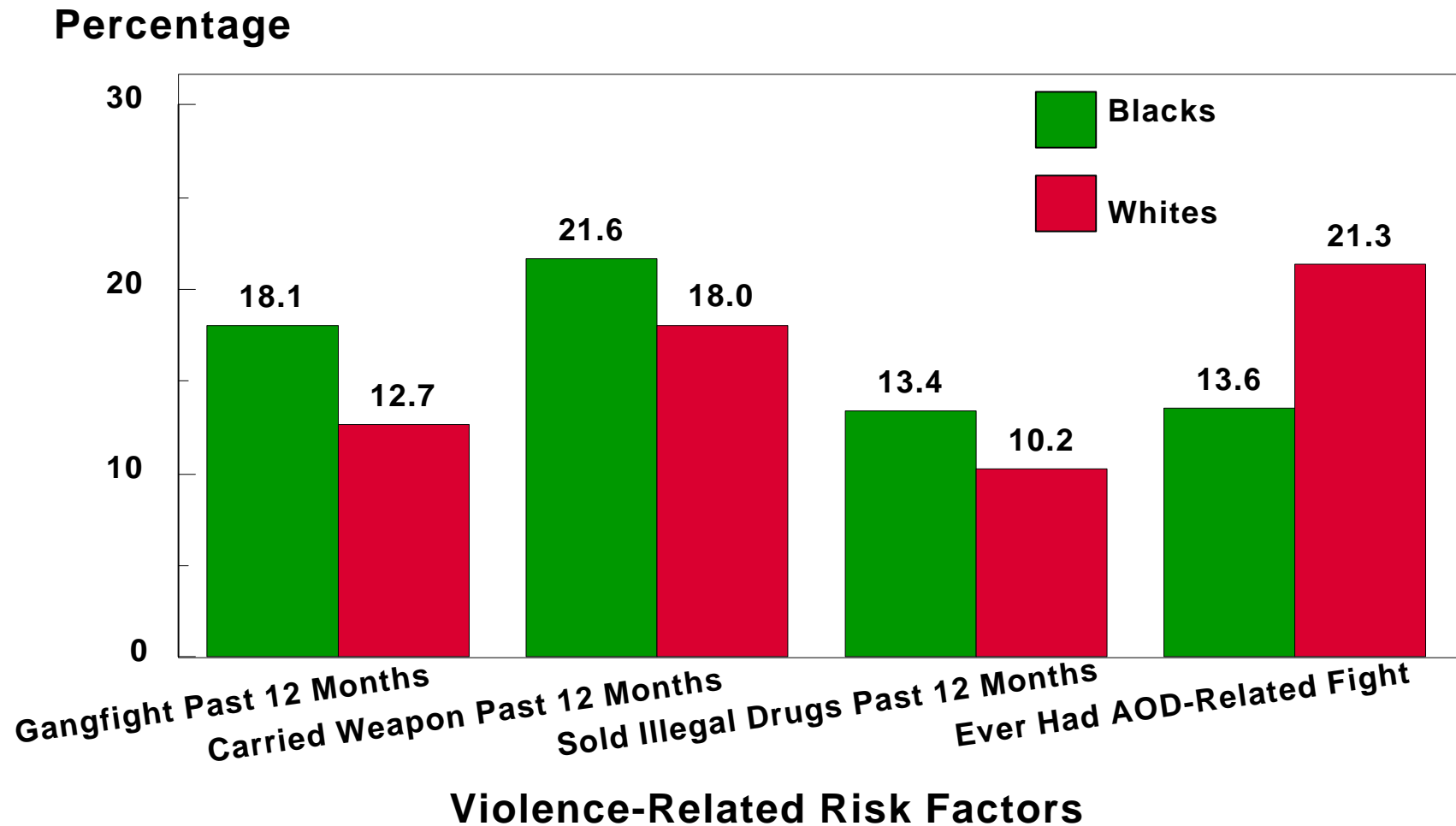
- Adult arrestees were 25% more likely than juvenile arrestees to report fair or poor physical health in the last 12 months, and the former were 77% more likely to report disability or functional impairment.
- Yet similar proportions of juvenile and adult arrestees reported fair or poor psychological health, often or always feeling depressed or ever attempting suicide.
- Juvenile and adult arrestees were similar in the percentage reporting ever being diagnosed with HIV/AIDS (2%) or tuberculosis (4%). Substantially higher percentages of adult arrestees reported ever being diagnosed with hepatitis (29% more than juvenile arrestees), sexually transmitted diseases (STDs) (93% more than juveniles), injuries requiring medical care (33% more than their juvenile counterparts), and other major health problems (reporting 28% more than juvenile arrestees reported).
- Rates of utilization of medical care services in the past 12 months were very similar for juvenile and adult arrestees, including percentages utilizing physicians' services, making emergency department visits, and being admitted to hospitals. However, 25% more juvenile arrestees had ever received mental health or psychiatric treatment than was the case among adult arrestees.
- Nearly 3 times more adult arrestees had no health insurance than juvenile arrestees (36% of adults and 13% of juveniles lacked health insurance). Adult arrestees were 41% more likely to report ever having trouble getting medical care compared to juvenile arrestees (16% of the former versus 12% of the latter).
- Juvenile arrestees were substantially more prone to violence than adult arrestees. Compared to adult arrestees, juvenile arrestees in the 12 months prior to the survey were:
 - 91% more likely to have gotten into a physical fight (63% versus 33%);
 - 5 times more likely to have gotten into a gang fight (32.5% versus 6.5%);
 - 69% more likely to have carried a weapon (38% versus 22.5%); and
 - 65% more likely to have been injured in a fight (28% versus 17%).

However, both adult and juvenile arrestees were about equally likely to report having been physically assaulted or abused in the past 12 months (24% of adult arrestees and 23% of juvenile arrestees).

- Fifteen percent of juvenile and adult female arrestees were pregnant when arrested. Pregnant females represented 3% of adults and 5% of juveniles in the arrestee study.
- Between 10% and 20% of arrestees were homeless in the 12 months prior to their arrest, including 11% of juveniles and 19% of adult arrestees.
- Among identified risk factors for both juvenile and adult arrestees were parental alcohol and/or other drug (AOD) abuse and immediate family members' incarceration.
 - Forty-three percent of both adult and juvenile arrestees had parents who abused AOD. However, one difference between adult and juvenile backgrounds lay in the combination of alcohol with other drug abuse in youthful offenders' families. Thus, 74% more adult arrestees reported parents who abused only alcohol and no other drugs (33% compared to 19% of juvenile arrestees), while 2.6 times more juvenile arrestees reported that their parents abused both alcohol and other drugs. Combined parental AOD abuse was reported by 21% of juveniles, but only 8% of adult arrestees. Finally, parental drug abuse in the absence of alcohol abuse was reported by 3% of juveniles and 2% of adults.
 - Eighty percent more juveniles than adult arrestees had immediate family members who had been incarcerated. Two-thirds of juvenile arrestees, compared to over one-third (37%) of adult arrestees, reported this risk factor.
- This profile suggests that while adult arrestees were, in general, more likely to be physically ill and injured than juvenile arrestees, the former were no more likely to utilize medical care services, and they were more likely to report health care access problems and to lack health insurance coverage. Mental health problems were no more frequently reported among juvenile than adult arrestees, although juvenile arrestees were 25% more likely to have received mental health or psychiatric treatment. Excess risk of violence-related behaviors, especially injuries from fights, characterized juvenile arrestees, while both juvenile and adult arrestees shared similar prevalence of tuberculosis and HIV/AIDS, and similar parental AOD abuse histories. Juveniles were at higher risk of having immediate family members who had been incarcerated than were adult arrestees.

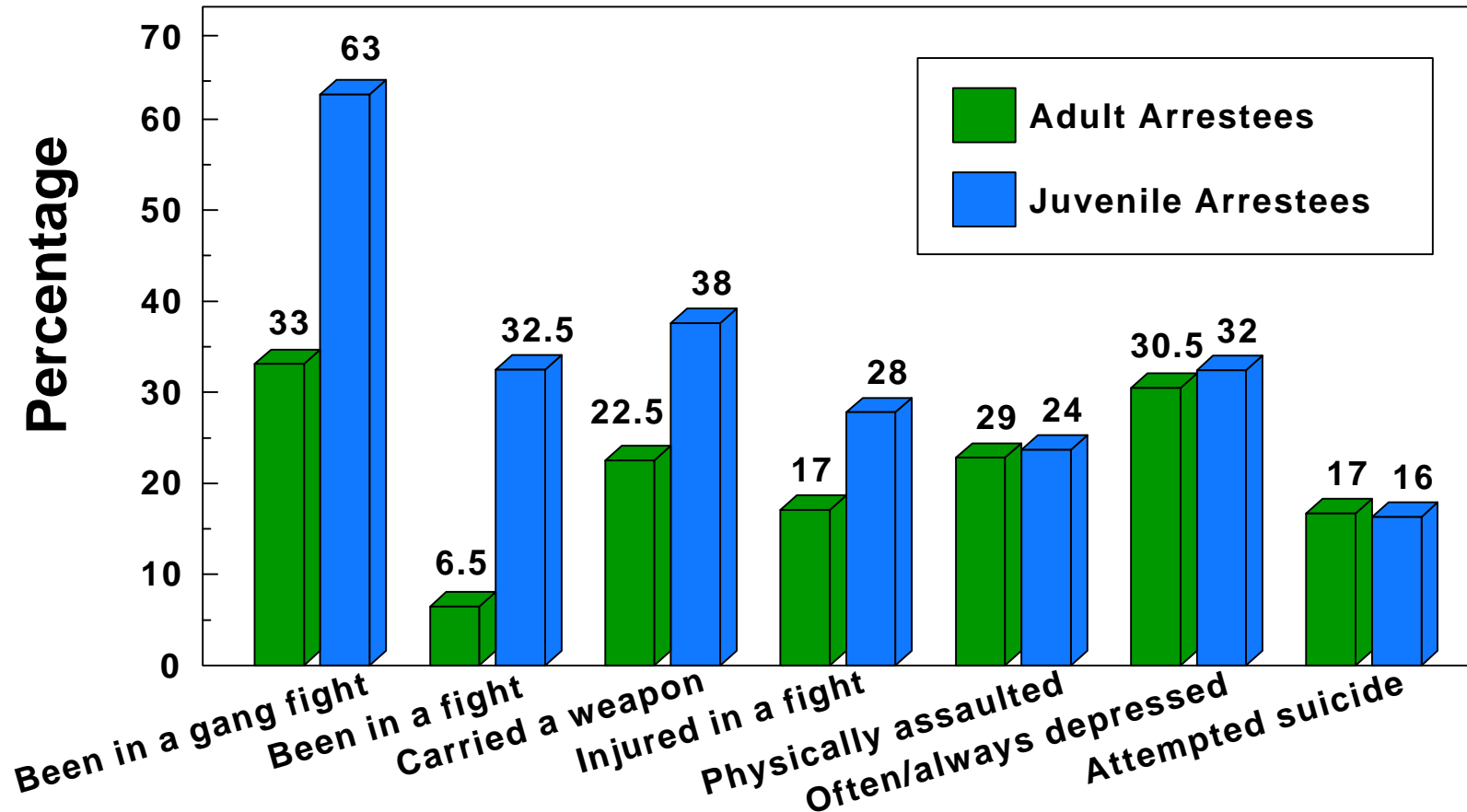
Source: Tennessee DUF/SANTA Arrestee Study, 1997. CHRG-TDH.

Percent of High School Students Engaged in Violent Behaviors by Race, 1995 and 1997



Source: Tennessee ATOD High School Survey, 1995/
1997, CHRG and TDH BADA.

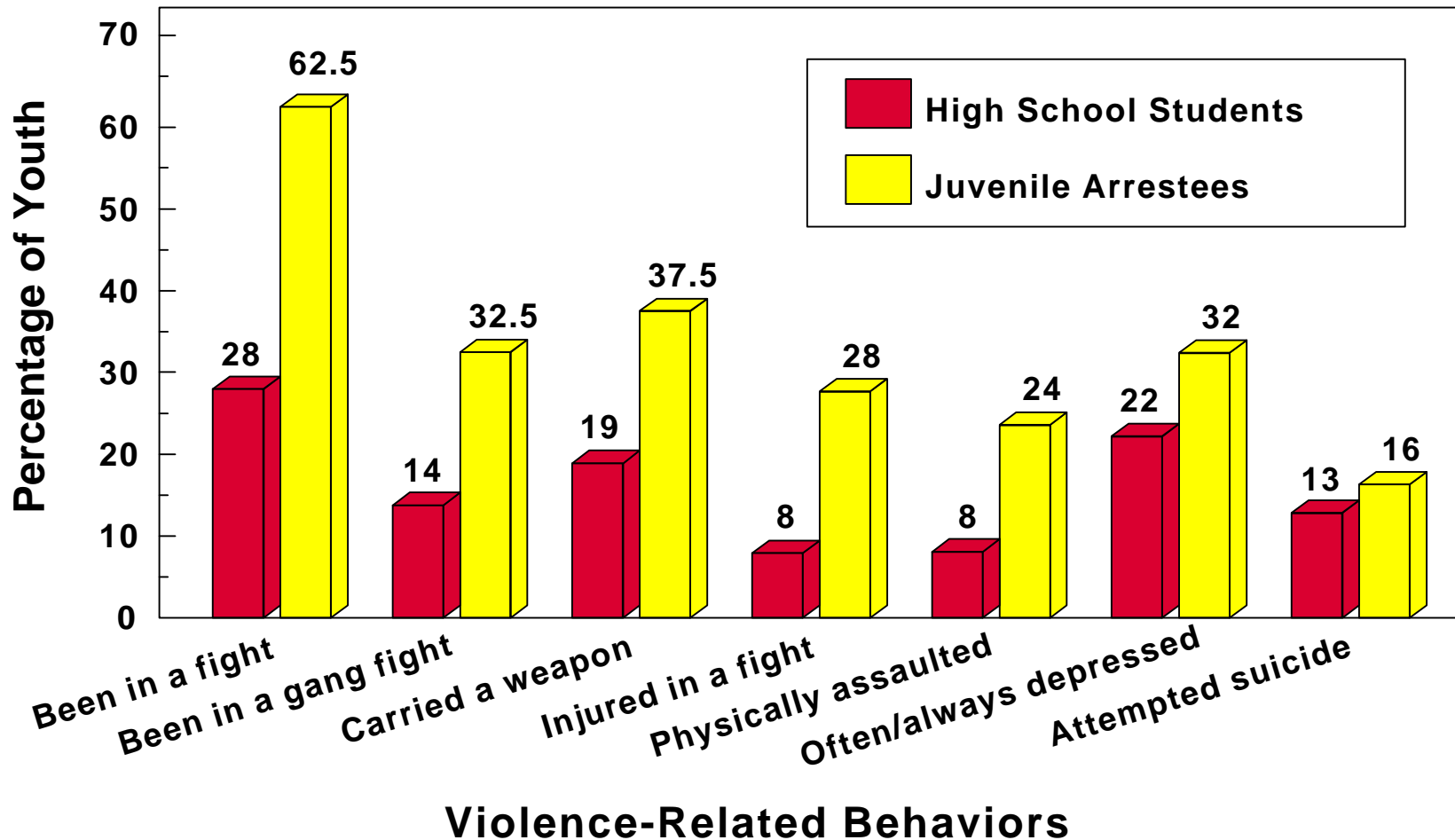
Percentage of Juvenile and Adult Arrestees at Risk of Injury and Violence-Related Behavior Tennessee, 1996-1997



Violence-Related Behaviors

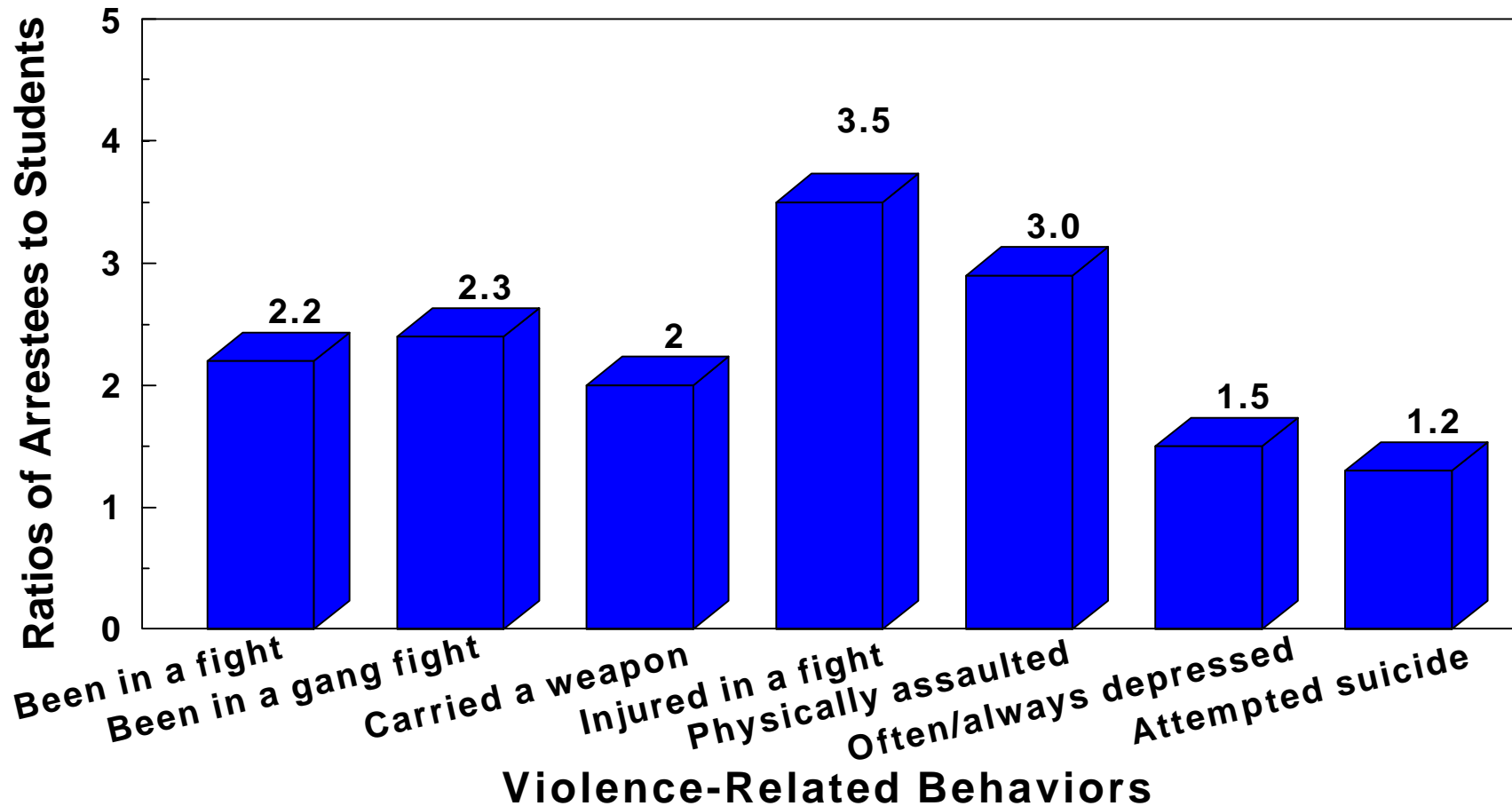
Source: Tennessee DUF/SANTA Arrestee Survey 1996-1997, CHRG and TDH BADA

Percentage of Juvenile Arrestees and High School Students in Tennessee at Risk of Injury and Violence, Tennessee, 1995 and 1997



Source: Tennessee ATOD High School Survey, 1995/1997 and Tennessee DUF/SANTA Arrestee Survey, 1996/1997

Ratio of Violence-Related Behaviors of Juvenile Arrestees to High School Students, Tennessee, 1995 and 1997



Source: Tennessee ATOD High School Survey, 1995, 1997 Tennessee DUF/SANTA Arrestee Survey, 1996/1997 UTK CHRG and TDH BADA, 1995.

High School Students' Health in Tennessee

Improvements in Health Risk Behaviors among Tennessee High School Students Surveyed in the YRBSS from 1991-1997¹⁴

Seat Belt Use Increased

- The proportion of high school students who rarely or never wore a seat belt when riding in a car driven by someone else declined steadily from 31% in 1993 to 28% in 1995 to 25% in 1997. The overall decline in failure to often wear seat belts was 19%. In 1997 males (29%) and ninth graders (30%) were most likely to report never or rarely wearing seat belts compared to their counterparts -- females (22%) and seniors (20%), for example.

Weapon Carrying Decreased

- The percentage of high school students carrying a weapon in the past 30 days decreased from 30% in 1991 to 24% in 1997, with a high of 32% in 1993. Male students and 9th graders were most likely to carry weapons as noted earlier.

Physical Fighting Declined

- Physical fights in the last 12 months were also less frequently reported by students -- 40% of students reported such fights in 1993 compared to 33% in 1997, a decline of about 18%. Again, male students were at higher risk for fights than female students (41% versus 26%, respectively), and 9th graders were much more likely to fight than upper class students.

Consideration of Suicide Falls but Attempts Remained Stable

- Serious consideration of suicide was lower among high school students surveyed in 1997 than in 1993 or 1991. A linear decline is evident in the percentage of students reportedly seriously considering suicide in the past 12 months, from 29% of students in 1991 to 22% in 1997. A slight decrease in the proportion of students making a suicide plan is observed from 1991 (19%) to 1997 (17%).
- The percentage of high school students actually attempting suicide has remained stable over time - around 9%-11%. Students reporting injury requiring medical care has also stabilized at 2%-4%.

¹⁴For some comparisons, only 3 rather than 4 data points were available.

Prevalence of Sexual Intercourse Decreased

- A final area of improvement in health risk for high school students is associated with declining pregnancy rates among Tennessee teenagers over the past 6 to 7 years. The percentages of students reporting ever having engaged in sexual intercourse have declined from 62% in 1993 and 61% in 1995 to 53% in 1997.

Comparison with Birth and Death Data for Adolescents

- If these trends are practically significant, they should be accompanied by decreasing pregnancy and birth rates among high school age females, as well as decreased suicides and homicides among males and females in the high school age-group (13-19).
- Adolescent (13-19) birth rates have indeed declined from 1990 to 1996 from 53.7 per 1,000 to 48.2 per 1,000, a decrease of 10%.
- Also, from 1990 to 1996, youth suicide rates declined by 16%, from 9.3 to 7.8 per 100,000 among youth aged 13-19.
- However, far from falling, homicide rates among youth ages 13-19 have risen in Tennessee, from 9.5 in 1990 to 13.7 in 1996, a 44% increase.

Source: YRBSS 1991, 1993, 1995, 1997.

Increased Health Risks for High School Students in the YRBSS for 1991-1997

- Use of certain drugs, especially marijuana, cigarettes and crack/cocaine, has increased in the 1990's.
- Increased marijuana use is the most striking upward trend in health risks among high school students in Tennessee and in the United States. Lifetime use of marijuana has increased from 33% of students in 1993 to 40% of students in 1995 and 46% of students in 1997 - an increase of about 39% in 6 years.
- Use of marijuana in the 30 days prior to the survey has also increased dramatically from about 14% in 1991 to 28% in 1997, a two-fold increase. The increase has been incremental in each two-year survey interval.
- Age at first use of marijuana has also declined (see also **Tennessee Health Status Report, 1997**).
- Cigarette smoking in the past 30 days has increased from 30% of students in 1991 to 39% in 1997, a 30% increase. However, the percentage of lifetime smokers has

been holding steady among youth at 74%-75% for the past several years, according to Tennessee YRBSS. The rate of 30-day use of smokeless tobacco (chewing tobacco and snuff) has declined slightly from 17% of students in 1991 to 14% in 1995 and 1997.

- Crack/cocaine use has increased slightly from the low of 5% lifetime users in 1993 to 6% in 1995 and 7% in 1997. Thirty-day cocaine use has also increased from 2% in 1991 and 1993 to 3% of students in 1995 and 1997. While these percentages are small, the increases represented are relatively large and worth noting. Crack use is about 71% of cocaine use (that is, 7% of students were 1997 cocaine users, and 5% of students had ever used crack or had freebased cocaine).

Stabilization of Rates of Risk Practices among High School Students from YRBSS

- Certain risk practices among high school students, based on the Tennessee YRBSS 1991, 1993, 1995 and 1997, have remained relatively constant over time. These include:
 - suicide attempts in the last 12 months -- 9%-11%
 - lifetime prevalence of cigarette smoking -- 74%-75%
 - lifetime prevalence of alcohol use -- 75%-77%
 - trying to lose weight -- 42%-45%
 - vomiting or taking laxatives in the past 30 days -- 6%-7%
 - eating fried foods, especially french fries and potato chips, in the last 24 hours -- 68%-69%.

The School as a Locus of Risky Practices among High School Students, Tennessee, 1997

To what extent were Tennessee schools a locus of risky practices among high school students in 1997? The next set of variables deal specifically with activities at school or on school property.

Violence and Theft on School Property

- In 1997, 11% of Tennessee high school students carried a weapon, such as a gun, knife or club, on school property on one or more days within 30 days of the survey. This represents nearly half of the students who reported carrying weapons in the past 30 days (24%). Male students were about five times more likely to report carrying weapons to school than female students (19% compared to 4%, respectively).
- Lack of perceived safety at or on the way to or from school resulted in 5% of students not attending school on one or more of the past 30 days. This affected male and female students similarly. But more younger students (9th and 10th graders) reported feeling unsafe than older students (11th and 12th graders).

Percentages reporting school absenteeism due to feeling unsafe ranged from 6% of 9th graders and 5% of 10th graders to 3% of both 11th and 12th grade students.

- Perceived lack of safety may be realistic, since 7% of students reported being threatened or injured with a weapon on school property one or more times during the past 12 months -- 8% of males and 6% of females so reported. Higher percentages of 9th graders (9%) than 10th and 11th grade students (7% each) reported this experience, compared to 5% of 12th graders.
- Nearly one-third (31%) of students had personal property stolen or deliberately damaged on school property one or more times during the 12 months prior to the survey. A somewhat higher proportion of males (33%) than females (29%), and of 9th graders (35%) than students in other grades (30% - 10th graders, 29% - 11th graders, and 28% - 12th graders) reported this.
- Overall, 14% of Tennessee students participating in the 1997 YRBSS survey reported that they were in a physical fight on school property at least one time in the previous 12 months -- these represented about 42% of students reporting being in a physical fight in the period regardless of location.
 - Twice as high a proportion of male as female students were in a physical fight at school (20% of males compared to 9% of females). Ninth graders reported the highest rates of fights at school at 20%, compared to 13%, 10% and 12% of students in 10th, 11th and 12th grades, respectively.

Use of Alcohol, Tobacco and Other Drugs on School Property

- Fifteen percent of students surveyed smoked cigarettes on school property on one or more of the past 30 days.
- Nine percent of students used smokeless tobacco (chewing tobacco or snuff) on school property in the past 30 days.
- Both smoking cigarettes and using smokeless tobacco on school property were more common among male students than female students. Smoking at school was nearly twice as common among males (19% versus 11% among females), while use of smokeless tobacco at school was nine times more frequent among males.
- Five percent of students had at least one drink of alcohol on school property in the past 30 days -- 6% of males and 3% of females.
- Five percent of students used marijuana on school property during the past 30 days. Males are greatly over-represented, with more than 4 times more males (9%) than females (2%) reporting this practice.

- More than one in four (28%) of students had someone offer, sell or give them an illegal drug on school property during the 12 months prior to the 1997 survey - more than 1 in 3 boys (34%) and 1 in 4 girls (23%).

Source: YRBSS, Tennessee Department of Education, 1997.

Youth Alcohol, Tobacco, and Other Drug Use, 1997, YRBSS¹⁵

TOBACCO USE

- Lifetime prevalence of cigarette smoking among Tennessee high school students surveyed in 1997 was 74%. Similar proportions of males and females were smokers (77% of males and 72% of females).
- In 1997, 30-day smoking rates were 39%, with 40% of males and 38% of females smoking currently. Current smoking increased with grade level such that 34%-36% of 9-10 graders reported smoking compared to 41% of 11th graders and 47% of 12th graders.
- Twenty-nine percent of smokers smoked a whole cigarette for the first time before age 13, with more males than females doing so and more 9th graders than upper grade students.
- Thirteen percent of students usually obtained their own cigarettes by buying them in a store or gas station during the past 30 days; 15% of males and 11% of females did so. As grade level increased, students were more likely to get their cigarettes from stores or gas stations (6% in 9th grade, 9% in 10th grade, 14% in 11th grade and fully 30% in 12th grade).
- Overall, 12% of high school students were not asked to show proof of age when buying cigarettes in a store during the past 30 days. No sex differences were observed, but students in the 12th grade (15%) were slightly more likely to be asked for proof of age than 9th graders (13%).
- Finally, 39% of students tried to quit smoking cigarettes. This suggests that a very high percentage of students were contemplating and attempting to quit smoking. Similar proportions of male and female students had tried to quit smoking. Only a slightly smaller percentage of 9th graders (37%) than higher grade students (40%-41%) had tried to quit.

¹⁵Due to differences in sampling design and study protocol, data will differ despite similar questions in the YRBSS for 1995 and 1997 and the Tennessee ATOD High School Survey, 1995/1997.

CHEWING TOBACCO OR SNUFF USE

- In 1997, 14% of students used chewing tobacco or snuff in the past 30 days. Males were nine times more likely to use these products than females (27% compared to 3% respectively). No difference was observed by grade.

ALCOHOL USE

- Three-quarters of high school student respondents reported that they had at least one drink of an alcoholic beverage in their lifetimes. The percentages were similar for males and females, but increased with grade level. The lifetime prevalence of drinking alcohol ranged from 71% of 9th graders and 73% of 10th graders, to 76% of 11th graders and 83% of 12th graders.
- Almost half (45%) of Tennessee high school students reported using alcohol in the past 30 days (47% of males and 43% of females). Again, the percentage of current drinking increased with grade level, from 39% of 9th graders, 44% of 10th graders, 48% of 11th graders to 53% of 12th graders reporting current alcohol use.
- Twenty-nine percent of Tennessee high school students surveyed reported heavy or binge drinking; that is, drinking five or more drinks of alcohol on at least one occasion during the past 30 days. Male students (33%) were more likely to drink alcohol heavily or binge drink than female students (24%). Students in the higher grades, especially seniors, were more likely to drink heavily or binge drink than students in lower grades. Percentages of heavy drinkers by grade were 22% of 9th graders, 28% of 10th graders, 30% of 11th graders and 38% of 12th graders.

MARIJUANA USE

- Ten percent of students had tried marijuana for the first time before age 13. Fifteen percent of males and 6% of females had tried marijuana early. Early use of marijuana was twice as high among 9th graders as 12th graders, partly a drop-out effect.¹⁶ Fifteen percent of 9th, but 8% of 12th graders, reported early initiation of marijuana use.
- Lifetime prevalence of marijuana use was reported by 46% of students in 1997 (49% of males and 44% of females). The highest percentage of marijuana users were 11th graders at 51%, and the lowest were 9th graders at 40%.
- Marijuana use in the past 30 days was reported by 28% of students, with both sexes being similarly affected (32% of males and 24% of females). Again, 11th graders reported the highest prevalence (30%) of 30-day usage of marijuana and 9th graders, the lowest (25%).

¹⁶Heavy alcohol and other drug users may be more likely to leave high school before graduating, decreasing the reported prevalence of such use among students in higher grades.

COCAINE USE

- Seven percent of students used any form of cocaine in 1997, and 5% used crack or freebase cocaine. Males were more likely than females to have ever used cocaine or crack. Three percent of students used any form of cocaine in the past 30 days (5% of males and 2% of females).

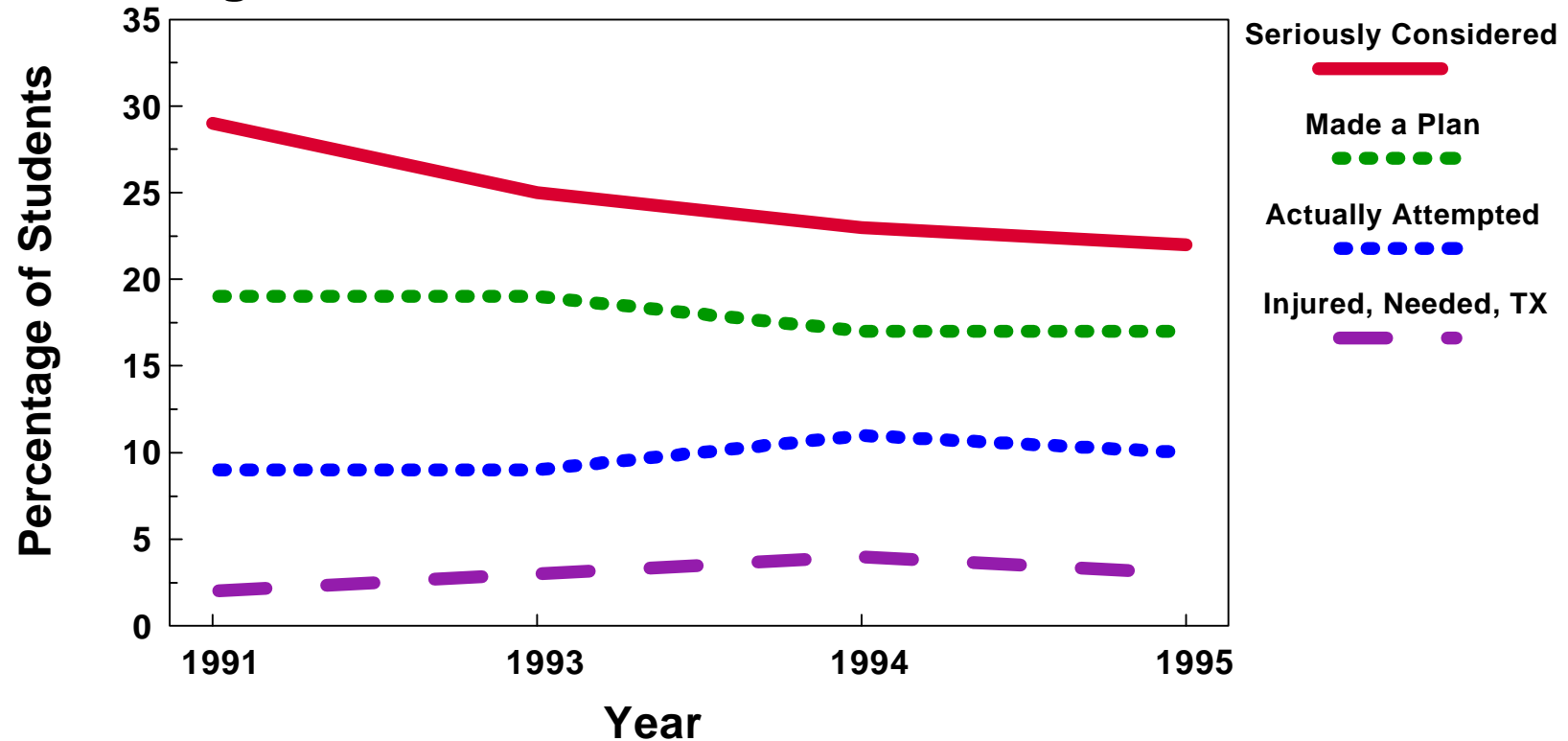
INHALANTS AND OTHER DRUGS

- Twenty-two percent of students had sniffed glue, breathed the contents of aerosol spray cans or inhaled any paint or spray to get high during their lifetimes. No differences were observed by sex (21-23%), but rates decreased sharply with increasing grade level from a high of 26% in 9th graders, to 23% in 10th graders, 19% in 11th graders, and 17% in 12th grade students.
- Six percent of students had taken steroid pills or shots without a doctor's prescription, a practice that was more common among males than females.
- Fifteen percent of students had used other types of illegal drugs, including LSD and other hallucinogens, ice or crystal methamphetamine, heroin and others. More males than females had used other illegal drugs, 18% versus 12%, respectively. Use levels increased with grade level -- 13%-14% of 9th and 10th graders, but 17% each of 11th and 12th graders had used illegal drugs.
- Three percent of students had used a needle to inject an illegal drug into their bodies during their lifetimes.

Other High Risk Practices

- In 1997, 53% of students reported ever having had sexual intercourse. Similar percentages of males and females (55% of the former and 52% of the latter) reported having had sexual intercourse. Proportions rise with grade level from 47% of 9th graders to a high of 66% of 12th graders.
- Thirty-eight percent of students had sexual intercourse during the past 3 months. Again, no substantial differences were observed by sex (40%, female students and 37%, male students), but prevalence increased from 9th grade (33%) to 12th grade (48%).
- Confining the comparison to changes in reported practices from 1995 to 1997, fewer students (10% versus 13%) had engaged in early sexual intercourse - defined as initiation before age 13. A decline in early sexual intercourse was noted both for males (from 20% in 1995 to 15% in 1997) and females (8% in 1995 to 6% in 1997).

Changes in Reported Suicidal Ideation and Behavior during the Past 12 Months among High School Students, Tennessee, 1991-1997



Seriously Considered	29	25	23	22
Made a Plan	19	19	17	17
Actually Attempted	9	9	11	10
Injured, Needed, TX	2	3	4	3

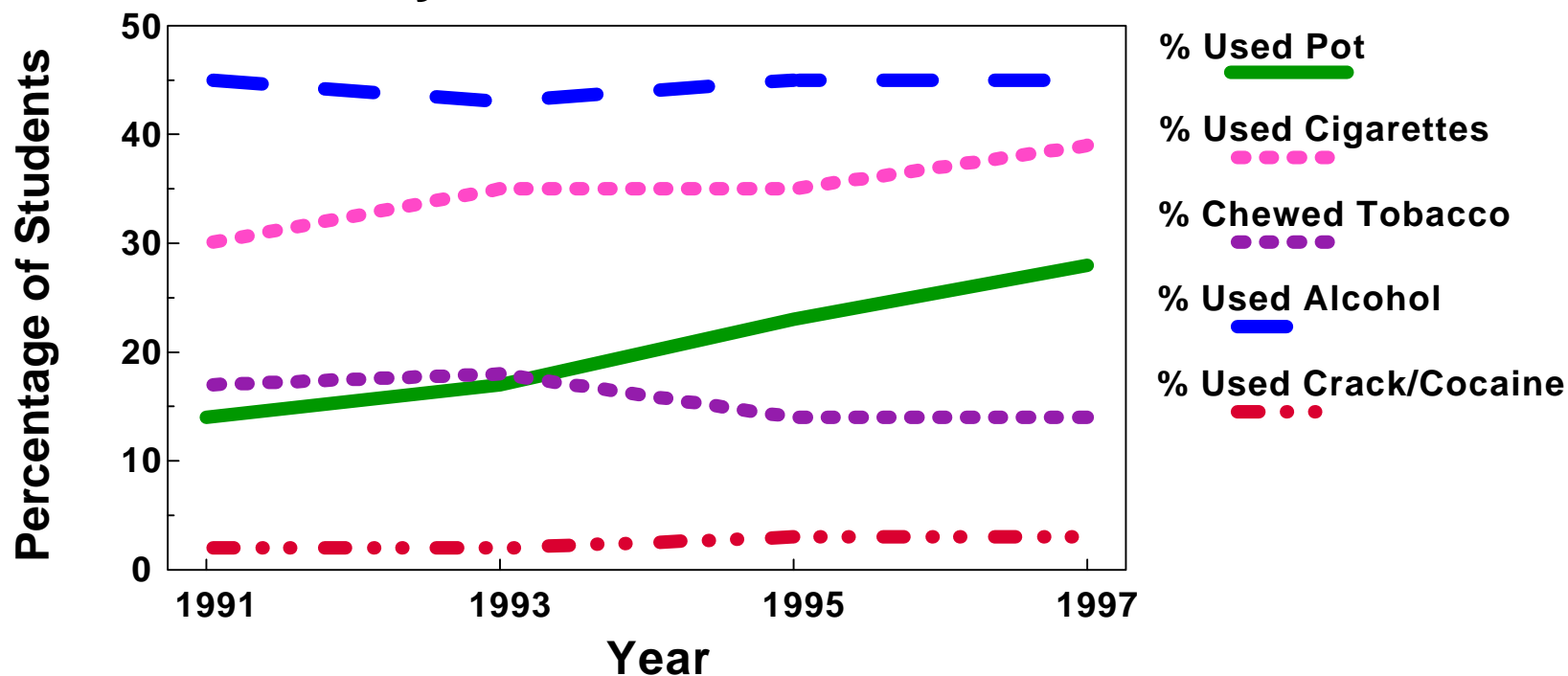
1991, 1995 and 1997 data are unweighted.
Source: YRBSS, Tennessee, 1991-1997

- A decline was observed in the proportions of students reporting four or more sexual partners in their lifetime, from 24% in 1995 to 20% in 1997. This decline held for both sexes.
- Finally, there was a reduction in the percentage of students reporting drinking alcohol or using drugs before their last sexual intercourse. The combination of AOD use and sex was reported by 20% of students in 1995 and 12% in 1997. A decline was observed for both males and females. In 1995, 24% of males reported AOD use before sex, compared to 15% in 1997. Among females, a drop in the percentage (from 16% to 9%) was observed. The highest percentage of students using AOD before sexual intercourse was among 12th graders -- about 1 in 5 students (19%) compared to 1 in 10 students in other grades (10%).
- The percentage of youth using birth control methods, especially condoms, had also increased. These percentages rose from 45% in 1991 and 54% in 1993 to 58% in 1995 for students using condoms as a percentage of students who had had sexual intercourse. Among sexually active students using any birth control method at last intercourse, 79% had done so in 1991, 83% in 1993 and 81% in 1995.¹⁷

Source: YRBSS, Tennessee Departments of Education and Health, 1995, 1997.

¹⁷This variable was differently reported in 1997.

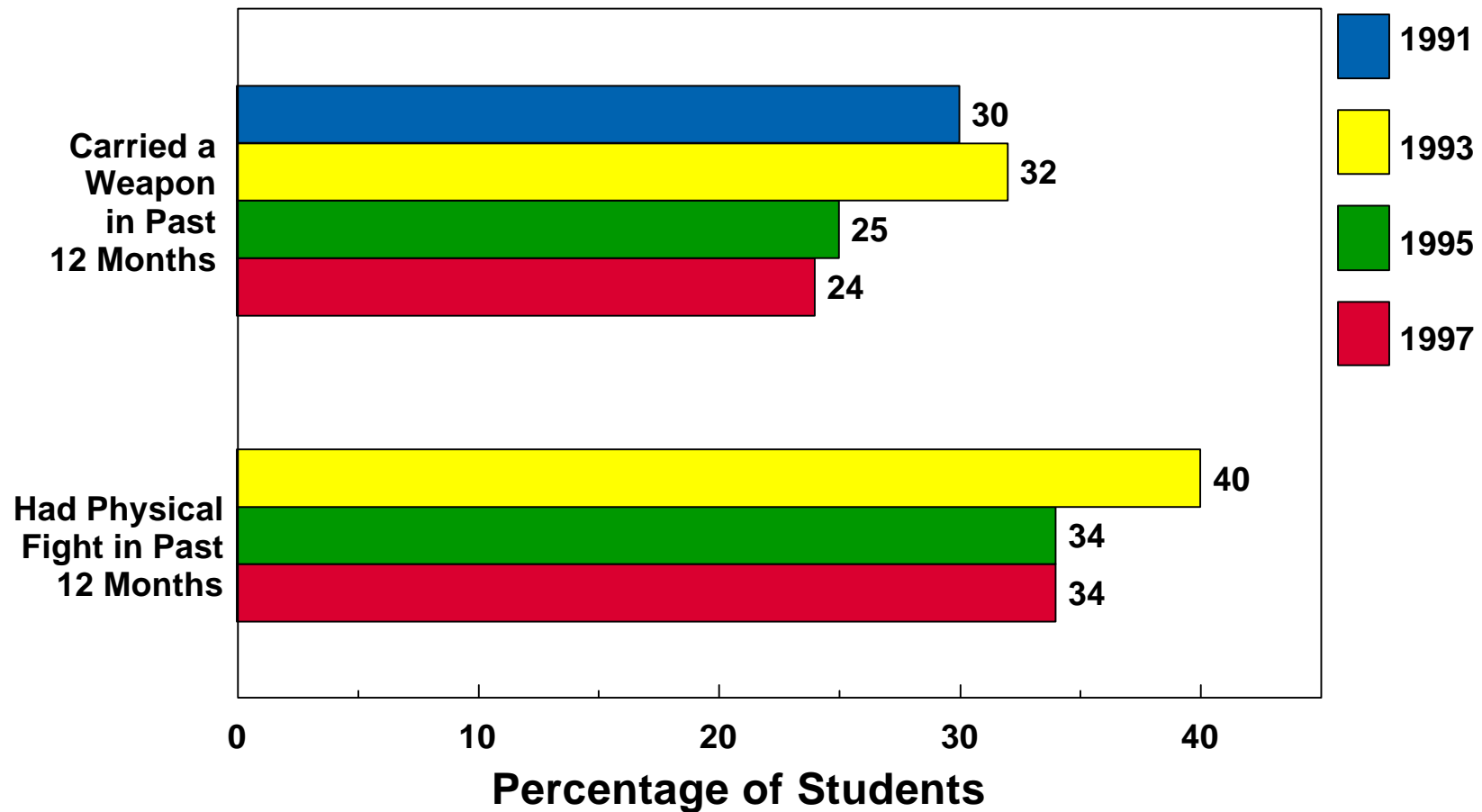
Time Trends in Percentages of High School Students Using Tobacco, Alcohol and Other Drugs in the Past 30 Days, Tennessee, 1991-1997, YRBSS



% Used Pot	14	17	23	28
% Used Cigarettes	30	35	35	39
% Chewed Tobacco	17	18	14	14
% Used Alcohol	45	43	45	45
% Used Crack/Cocaine	2	2	3	3

1991, 1995 and 1997 data are unweighted.
Source: YRBSS, Tennessee, 1991-1997

Time Trends in Percentages of High School Students Engaged in Violence-Related Behaviors in the Past 30 Days, Tennessee, 1991-1997, YRBSS



1991, 1995 and 1997 data are unweighted.
Source: YRBSS, Tennessee, 1991-1997

Physical and Mental Health of Young Adult High School Leavers, Tennessee, Alcohol, Tobacco, and Other Drug Needs Assessment Survey, 1993

Sociodemographic Differences Between Young Adult School Leavers and Stayers

- Young school leavers are adults aged 18-34 who left high school before graduating or receiving a diploma or GED.¹⁸ School leavers had, on average, about 4 years less schooling than others their age. Young adult school leavers had completed an average of about 9.8 years of schooling, while the average educational attainment for comparable stayers was 13.6 years.
- Young school leavers were much more likely to be poor than stayers. One-third of school leavers were poor (i.e. came from households with annual incomes of \$10,000 or less) compared to 12% of stayers. The former lived in households with average annual incomes of \$18,535 compared to \$31,442 among stayers.
- A higher percentage of school leavers (30%) were unemployed in the past 12 months compared to their counterparts (12%), while more school leavers who were employed had part-time employment (24% of the former versus 19% of the latter).
- Young school leavers were much more likely than stayers to reside in nonmetropolitan regions of Tennessee (80% compared to 61% of stayers). This suggests the importance for public health of increased educational and employment opportunities among young school leavers in nonmetropolitan counties of Tennessee.
- School leavers were no more likely to be married than stayers, but they were more likely to live in households with children and youth under the age of 18 than their counterparts who remained in school (68% of the former and 56% lived in such households).

Comparison of Health Status, Utilization and Access to Care by Leaver Status

- Young school leavers were much more likely to rate their health as fair or poor (19%) than stayers (6.5%). The former (14%) were also more likely to report disability or functional impairment than stayers (5%). The combined percentage of young adults either ill or disabled was 24% of school leavers and 9% of stayers, a three-fold difference.

¹⁸School leavers composed 22% of the adult sample and 13% of young adults ages 18 through 34 from the Tennessee Alcohol and Other Drug Needs Assessment Survey, 1993.

- Young school leavers were more likely to report being diagnosed with, or treated for such chronic problems as hypertension (15% versus 9%), cancer (4.6% versus 1.5%), diabetes (5% versus 2.5%), and GI tract disorders (15% versus 8%), while no group differences were observed in prevalence of reported injuries, AIDS/HIV, convulsions/seizure disorder, heart disease, stroke, emphysema or other lung disease, or liver disease. In all, school leavers reported about one-and-a-half times more categories of health conditions diagnosed or treated in their lifetimes than stayers.
- Mental health problems were reported by a higher percentage of young adult school leavers.
- Thus, school leavers were significantly more likely to report being severely stressed in the past 30 days (14% versus 9%), and to report one or more emotional or psychiatric symptoms in the same period (55% versus 33%). Such symptoms included anxiety, nervousness, fatigue, and depression. The average number of categories of emotional symptoms reported in a 30-day period was about twice as high for school leavers (1.2) as for stayers (0.6). Anxiety and depression represented 76% of emotional symptoms reported among school leavers and 72% of such symptoms among stayers. A higher percentage of leavers (7%) had ever received treatment at a mental health or psychiatric facility, compared to stayers (4%).
- Regarding health insurance, school leavers in 1993 were more likely to lack any form of health insurance than stayers (32% versus 17%, respectively). The former were also more likely to be enrolled in Medicaid, now TennCare (22% compared to 6%). Conversely, school leavers were less likely than stayers to be privately insured (42% versus 73%).
- Young school leavers (25%) were more likely than stayers (18%) to lack a regular source of medical care -- a medical home. Among those with a regular care source, school leavers were also more likely than stayers to use emergency rooms, whether in hospitals or walk-in centers, for regular care (10% versus 6.5%). Stayers were more likely to use private physicians or clinics for their care (66% versus 54%).
- Young school leavers reported significantly more problems accessing health care in the past 12 months (11% versus 5%), particularly problems in being denied medical care because of inability to pay or inadequate coverage (47% versus 23%) and problems related to distance from sources of health care (32% versus 6%).
- Although they were no more likely to make one or more physician visits in a year (63%), a higher percentage of school leavers than stayers utilized more expensive medical care services in a year, including ER visits (33.5% compared to 23%) and

hospitalizations (17% versus 11%). Young school leavers utilized more such services, averaging 0.85 ER visits and 0.22 hospital admissions in a 12-month period compared to stayers' averages of 0.36 and 0.14, respectively. School leavers' utilization of physician visits also averaged slightly higher - 3.6 in 12 months compared to 2.9 for stayers.

Alcohol and Other Drug Use among Young Adult School Leavers

- Young school leavers were much more likely to use tobacco, equally likely to use illegal drugs, and substantially less likely to use alcohol than stayers.
- Lifetime smoking prevalence among school leavers was 65% compared to 54% of stayers. Twelve-month prevalence rates for smoking were 50% and 33%, respectively. School leavers who smoked cigarettes consumed an average of 19 cigarettes per day compared to 15 per day among smoking stayers. Recent use of smokeless tobacco was also higher among school leavers with 12-month prevalence rates of 10% compared to 7%.
- Among school leavers, 25% used an illegal drug in their lifetimes compared to 22.5% of stayers.
- A higher percentage of school leavers had never drunk any alcoholic beverages (33% compared to 22% of stayers), and a higher percentage were former or infrequent drinkers (27% versus 18%). However, stayers were more likely to have drunk alcohol recently, i.e., in the past 12 months (60%), compared to school leavers (40%). Similarly, proportionally more young school leavers (46%) than stayers (31%) used neither alcohol nor drugs in the past year. A higher percentage of school leavers (15% versus 10%) used other drugs while abstaining from alcohol. Stayers were more likely to use alcohol alone in the absence of other drugs (41% versus 22%). However, stayers were no more likely than school leavers to have used both alcohol and other drugs in the past year (16%-18%). School leavers were less likely to drink alcohol heavily (5+ or more alcoholic drinks at a sitting at least once in 12 months -- (6% versus 10% of stayers).
- The same percentages of school leavers (9%) as stayers (8%) reported ever having felt that they were addicted to a drug or substance, and 54% of both groups of respondents felt they were currently addicted to a drug or substance. Only 3.5% of school leavers and 2.1% of stayers had ever received formal AOD treatment, that is, treatment at an alcohol or drug treatment facility, while 6.5% of stayers and 7.6% of school leavers had received either formal or informal (12th step/self-help group) AOD treatment.

- School leavers were more likely to express concern about parental AOD use, abuse and problems than stayers.
- Similar percentages (27% of stayers and 25% of school leavers) in this Tennessee sample were assessed as needing any alcohol or other drug (AOD) treatment based on DSM III-R criteria.
- The gap between need for and receipt of AOD treatment was large. Overall, at least 75% of stayers and 67% of young school leavers in Tennessee who needed AOD treatment had not received it. The same percentage of school leavers and stayers (67%) needed no AOD treatment. The same percentage both needed AOD treatment and had received it (5% stayers versus 6% school leavers). Both groups were equally likely to have received AOD treatment and no longer needed it; that is, may have recovered (1.5% school leavers versus 1.4% stayers). And, a similar percentage of stayers (27%) needed AOD treatment yet had never received any such treatment as among school leavers (25%).
- It is important to note that while the two groups did not differ in AOD treatment receipt and need, when alcohol treatment need alone was considered, a significantly higher percentage of stayers was assessed as needing such treatment (22%) compared with school leavers (17%).

Summary and Conclusions

- Poverty, unemployment, poor physical and mental health and disability were all associated with school leaving among young adults in Tennessee. Lack of health insurance and reduced access to health care services, coupled with relatively high utilization of more expensive services such as emergency room and inpatient services, also characterized school leavers ages 18-34.
- Multivariate analyses suggest that young school leavers were poorer, more likely to be male, more likely to be unemployed, and more likely to reside in nonmetropolitan areas of Tennessee than were stayers, when controlling for sex, race, age, and other factors. School leavers were also more likely to live in households with children or youth under 18 compared with their better-educated counterparts.
- School leavers aged 18 to 34 were much more likely to have had no health insurance and to have been Medicaid enrollees (prior to TennCare). They were also more likely to have reported fair or poor health or functional limitation or disability than stayers. Diagnosis with and treatment for cancer was a particularly high risk for this group. School leavers also reported more mental health problems, including depression and anxiety, compared to their better-educated peers. School

leavers were more likely to report concern about parental alcohol and other drug abuse than others, and they were much more likely to use ERs and walk-in clinics for regular care than were stayers.

- While controlling for other variables, young school leavers ages 18-34 were less likely than stayers to have drunk alcoholic beverages in the past 12 months, yet they were over twice as likely to have used tobacco in that period. No differences in the prevalence of alcohol and other drug-related life problems were noted, nor did the two groups differ in their use of illegal drugs or psychoactive prescription drugs.
- While both male and female school leavers were more likely than male and female stayers to be recent tobacco users, to be poor and unemployed, and in fair or poor health or disabled, some sex differences were observed. Increased risk of cancer diagnoses among young adult school leavers was confined to males, as was lack of health insurance coverage. Males aged 18-34 who had left school were much more likely to have been hospitalized in the past 12 months. They were much more likely to report GI tract problems, to be children of alcoholics or drug abusing parents, and to be uninsured than males who were stayers. Female school leavers were more likely than female stayers to be enrolled on Medicaid, to reside in nonmetropolitan areas, to report mental health problems during the 30 days prior to the survey, to live in households with children or youth under 18, and to have made at least one emergency room visit in the past 12 months.
- As with other vulnerable groups, high school leavers in the early working and childbearing ages of 18 to 34 were less healthy, had less access to needed physical, mental health and AOD services, and suffered decreased life changes in terms of poverty and unemployment compared to their counterparts who, at a minimum, received high school diplomas. School leavers are a prime focus for preventive interventions aimed at reducing school leaving rates, unmarried pregnancy rates, adolescent pregnancy and birth rates, and alcohol, tobacco, and other drug use and abuse prevalence among Tennessee youth and adults.

Source: Tennessee Alcohol and Other Drug Needs Assessment Survey of Adults, CHRG-BADA, TDH, 1993.

ADULT HEALTH STATUS IN TENNESSEE, BRFSS, 1996¹⁹

Selected Results

Selected behavioral risk factors among Tennessee adults provide insight into progress toward Year 2000 Objectives.

Health Status and Morbidity among Tennessee Adults

- Nearly 1 in 5 Tennessee adults ages 18 and over living in households perceived their general health as fair or poor in 1996.
- Among Tennessee adults in 1996, 28% had been told at least once that their blood pressure was high. No appreciable differences were observed by sex or race, but large differences were noted by age, education and income.
 - Hypertension prevalence ranged from 11% among 18-24 year-old adults to 46% among those 65 and over.
 - Hypertension prevalence was highest among those with the lowest incomes - 42% of Tennesseans with annual incomes of less than \$10,000 were hypertensive compared to 18% of adults with annual incomes of \$75,000 or more.
 - College graduates were least likely to report hypertension (22%), while adults with some high school education (45%) were most likely to do so.
 - Hypertension was lower in younger males than females (ages 18-24) but was higher among older males than females. The highest prevalence of hypertension was among males ages 65 and over -- 48% compared to 44% among elderly females.
- Diabetes was reported by 5% of Tennesseans in 1996.
 - Excess prevalence of diabetes was observed among nonwhites and females. Diabetes was reported by 6.2% of nonwhites versus 4.8% of whites, and by 5.8% of females versus to 4.2% of males.

¹⁹Source: Tennessee BRFSS. TDH and CDC Division of Policy and Planning, Health Statistics and Information on Adult Behavior, 1996.

- Diabetes risk rose with age, from a low of 0.5% among 18-24 year-olds and 1.8% of 25-34 year-olds to a high of 9.9% of persons 55 years of age and over.
- Low income was associated with diabetes morbidity. Poorer adults had the highest prevalence of diabetes -- 7.5% of persons with annual incomes of less than \$10,000 were diabetic compared to 4% of those earning \$50,000 or more annually.
- Less well-educated adults were also more likely to report diabetes with a prevalence of 11%-12% among those who never attended school or attended only elementary school compared to 3.9% among college graduates.

Health Access

- Lack of a health insurance plan was reported by 12% of adults, affecting more males (14%) than females (10%) and more nonwhites (17%) than whites (11%). This is a somewhat lower percentage than reported from national data for Tennessee (15%) for 1996. Younger adults were much more likely to lack a health plan; 23% of those 18-24 compared to 3% of those 65 and over were uninsured. Young males aged 18-24 were most likely to lack a health care plan (30%), while elderly females were least likely to do so (2%).

Utilization of Preventive Services

- Twenty percent of Tennessee females ages 40 and over had never had a mammogram. Twenty-nine percent had never had either a mammogram or a clinical breast examination. Females in their forties (40-49) and in their seventies and older were most likely to have never had such a test, at 22% and 23%, respectively.
- Females who were never married (32%) or separated (30%) were more likely to have never had mammograms than other females. The lower the income and educational levels, the more likely females ages 40 and over in Tennessee were to have never had mammograms.

Risk Factors

High Cholesterol

- Thirty-one percent of adults in Tennessee in 1996 had been told they had high cholesterol by health professionals. The national target for Year 2000 is 20%.

- Tennessee males were closer to the target than females, with 27% of the former reporting high cholesterol compared to 34% of the latter. High cholesterol was more prevalent among females in nearly every age-group, particularly the younger and older age-groups (18-24 and 65+ over).
- Blacks and whites did not differ on self-reported high cholesterol (30%-31%).
- A higher percentage of less well-educated and low income adults reported high cholesterol. Thus, 51% of non-attenders and 44% of those with elementary school or some high school education reported high cholesterol, compared to 30% of high school graduates, 26% of those with some college or technical school, and 27% of college graduates.
- Forty-five percent of poorer adults with annual incomes of less than \$10,000 reported high cholesterol as did 49% of those with incomes from \$10,000-\$14,999. On the other end of the income spectrum, 26%-28% of those with incomes from \$50,000 and over did so.
- The prevalence of high cholesterol increased with age, from 13% among the 18-24 year-olds to 42% and 39% among older adults, ages 55-64 and 65 and over, respectively.

Obesity

- Obesity was reported by 29% of Tennessee adults -- 31% of males and 28% of females. The national target is 20% overweight adults by Year 2000. Males were more likely to be overweight than females in every age-group save the oldest. Among adults ages 65-74, the prevalence is the same by sex, and in the age-group 75 and over, the female percentage exceeds the male.
 - Nonwhites were more likely to have body mass indexes indicating overweight (36%) than whites (28%).
 - Overweight was lowest at either end of the age range - in the 18-24 age-group (13%) and the 75+over age-group (24%).
 - Income and education were not clearly related to overweight, with the exception of a high prevalence among those who never attended school (49%) and a low prevalence among college graduates (23%).

Non-Use of Safety Belts

- Overall, 33% of Tennessee adults were non-users of safety belts, twice the prevalence targeted by Year 2000 as a health objective for the nation.
 - Males were more likely to sometimes, seldom or never wear safety belts compared to females, 24% versus 16%, respectively. Little difference was noted by race (19% of whites versus 20% of nonwhites). At all ages, males were less likely to wear safety belts than females.
 - Safety belt non-use decreased with higher levels of education and income and increasing age.

Current Smoking

- Smokers represented 28% of adults -- 31% of males and 25% of females; 29% of whites and 23% of nonwhites. Males had higher current smoking prevalence in every age-group.
 - The highest proportions of smokers were in the middle income groups, were divorced (44%) or separated (37%), and had some high school education (42%).
 - The lowest proportions of smokers had annual incomes of \$50,000 or more (17%-21%), were widowed (17%) or never married (26%) and had either never attended school (14%) or had graduated from college (12%).
 - Current smoking peaked in the age-group 35-44 (39%). About one-third of 25-34 year-olds and 45-54 year-olds and one-quarter of the age-groups 18-24 and 55-64 reported current smoking. The lowest prevalence of smoking was among older adults -13% in 65-74 year-olds and 4% in the 75+ over age-group.

Acute or Binge Drinking of Alcoholic Beverages

- Defined as drinking five or more alcoholic drinks on one or more occasion in the past month, 11% of males and 3% of females or 7% of all adults were acute or binge drinkers.

- Whites were more likely to report binge drinking or acute excess alcohol consumption than blacks (7% versus 4%, respectively). Males predominated in every age-group as binge drinkers.
- The youngest age-group, 18-24, manifested the highest prevalence of binge drinking (12%), followed by the age-groups 35-44 (11%) and 25-34 (10%). Older adults were much less likely to report binge drinking -- 4% of those aged 45-54, 2% of the 55-64 year age-group, and 1% of the 65+ over group did so.
- Lower educational levels were related to higher prevalence of acute drinking -- 8%-9% of adults with some college or college graduates reported binge drinking, compared to less than 1% of elementary school educated adults, and 6%-7% of those with some high school or high school graduates.
- Binge drinking was highest among adults with annual incomes of \$75,000 or more (10%) and lowest among those with incomes between \$10,000 and \$24,999 annually (5%-6%). However, the poorest adults also had relatively high binge drinking prevalence at 9%.

Chronic Drinking of Alcoholic Beverages

- Chronic excess alcohol consumption was defined as drinking two or more alcoholic drinks per day or sixty or more alcoholic drinks in a 30-day period. About 1.3% of adults in 1996 reported this. Males were much more likely to report chronic excess alcohol consumption than females (2.3% versus 0.3%, respectively). This pattern held for every age-group, especially the youngest and oldest groups.
 - Whites (1.4%) more frequently reported chronic drinking than blacks (0.8%).
 - About 1% of adults ages 18-24, 55-64 and 65+ reported chronic drinking, compared to 2% of young adults ages 25-34, and 1.3% of adults 35-54.
 - Adults with the highest incomes (\$75,000 and over) were much more likely to report chronic excess alcohol consumption (4.3%) than those with incomes in the range of \$35,000-\$49,999 (2.4%). Around 1% of adults at other income levels reported chronic drinking.

Drinking Alcohol and Driving

- About 1 in 70 Tennessee adults (1.4%) reported drinking alcohol and driving in the past 30 days. Nearly four times more males than females (2.2% versus 0.6%) and about 50% more whites than blacks (1.4% versus 0.9%) reported drinking and driving.
 - Younger adults (18-24) were by far the most at risk for drinking and driving (6%), compared to no reported risk behavior in the oldest ages (55+) (a possible product of denial or small sample size).
 - Adults at the lowest and highest income levels exhibited high prevalence of drinking and driving, with peaks in prevalence at less than \$10,000 annual incomes (3%) and \$75,000 or more income levels (2.9%).

Lack of Physical Activity

- More than 2 in 5 Tennesseans engaged in no physical activity in the specified period. Females (42%) and nonwhites (43%) were more likely than males (39%) or whites (40%) to be physically inactive.
- Widowed and separated adults were most likely to be physically inactive (60% and 56%, respectively). Never married adults and unmarried couples were least likely to report no physical activity (32% and 18%, respectively).
 - Lack of physical activity increased sharply with age but decreased with income and education.
 - Twenty-six percent of 18-24 year-olds, compared to 49% of 65-74 year-olds and 55% of those 75 and over, were physically inactive in 1996.
 - Eighty percent of adults who never attended school and 65% of those with an elementary education alone were physically inactive compared to 47% of high school graduates, 30% of those with some college or technical school, and 23% of college graduates.
 - Adults in the lowest income group (less than \$10,000 annually) were most likely to be inactive (59%), while the group earning \$50,000 - \$75,000 annually were least likely to report no physical activity (19%).

- In the older ages, 55+ over, lack of physical activity was markedly higher among females.

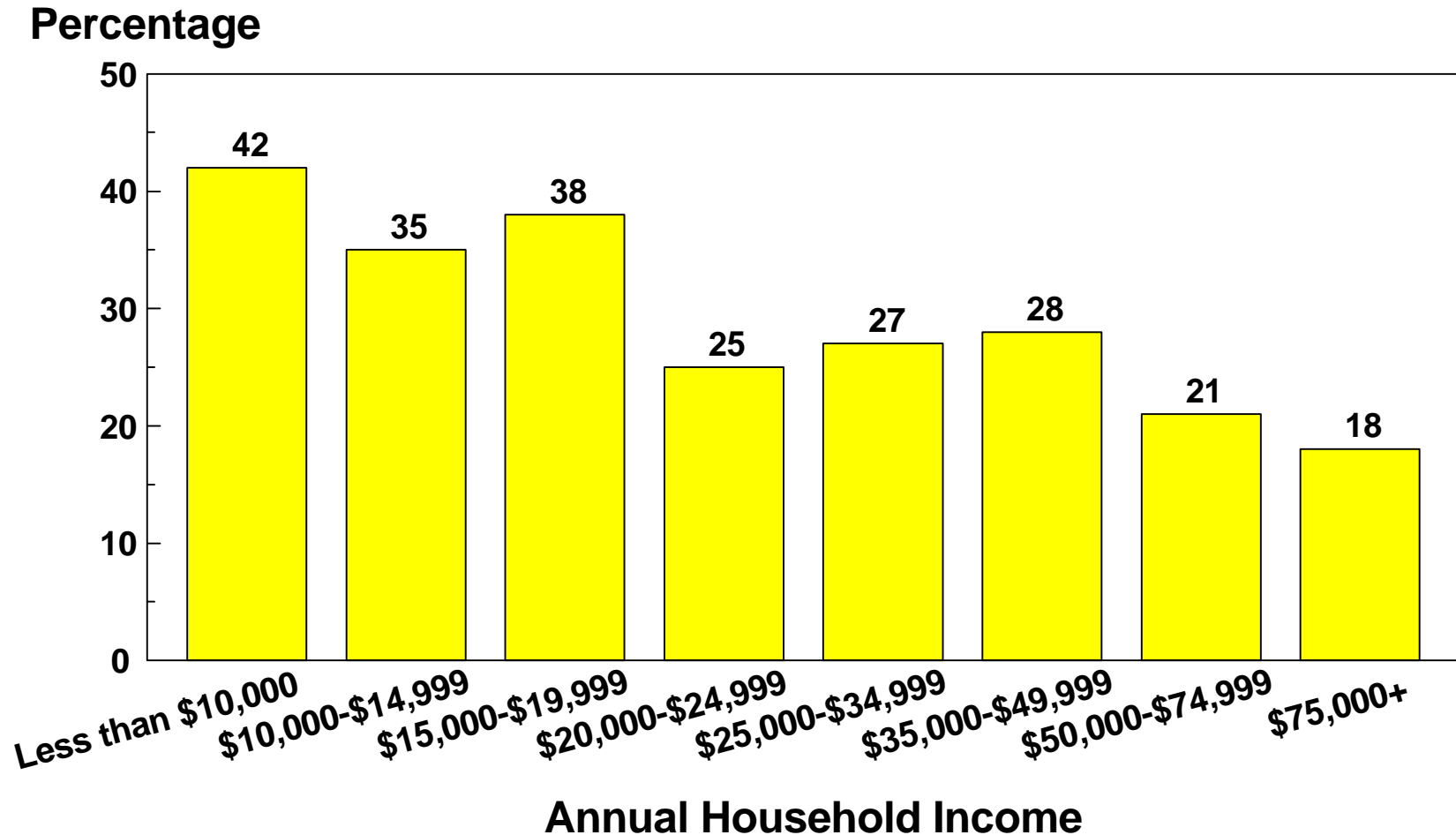
Sedentary Lifestyle

- Tennesseans in 1996 were more than four times as likely to report sedentary lifestyles (68%) as the 15% of adults targeted in Year 2000 Objectives.
- Excess risk of sedentary lifestyle was observed for nonwhites (70%) compared to whites (68%).
- Percentages of adults with sedentary lifestyles rose from 58% among 18-24 year-olds to 69%, 67% and 66% among person in the 25-34, 35-44 and 45-54 year age-groups, respectively. Jumping to 73.5% in the 55-64 age-group and falling to 68% in the 65-74 year-olds, the highest prevalence of sedentary lifestyles was noted among the oldest adults (75+ over) at 79%.
 - Inadequate education and low income were associated with sedentary lifestyles. The less well-educated and poorer among adults had the highest prevalence of sedentary lifestyles, and the most well- educated with the highest incomes had the lowest prevalence. Thus, 89% of adults who had never attended school reported sedentary lifestyles, compared to 86% of those with elementary school educations, 82% of those with some high school, and 72% of high school graduates. Fifty-nine percent of adults with some college, and 57% of college graduates reported such lifestyles.
 - Similarly, 81% of those with annual household incomes of less than \$10,000, compared to 54% of those with incomes of \$75,000 and over, led sedentary lifestyles in 1996.

Lack of Fruit and Vegetable Consumption

- Eating fruits and vegetables less than 5 times daily was reported by 74% of adults in Tennessee in 1996.
- Males (77%) and nonwhites (80%) were at greater risk of this behavior than females (72%) or whites (73%).
- Never married, separated and divorced adults were more likely to have eaten fruits and vegetables less than five times daily (80%, 83%, and 78%, respectively), while married and widowed adults were less likely to have done so (72%-73%).

Percent of Adults Reporting Hypertension by Income, Tennessee, 1996



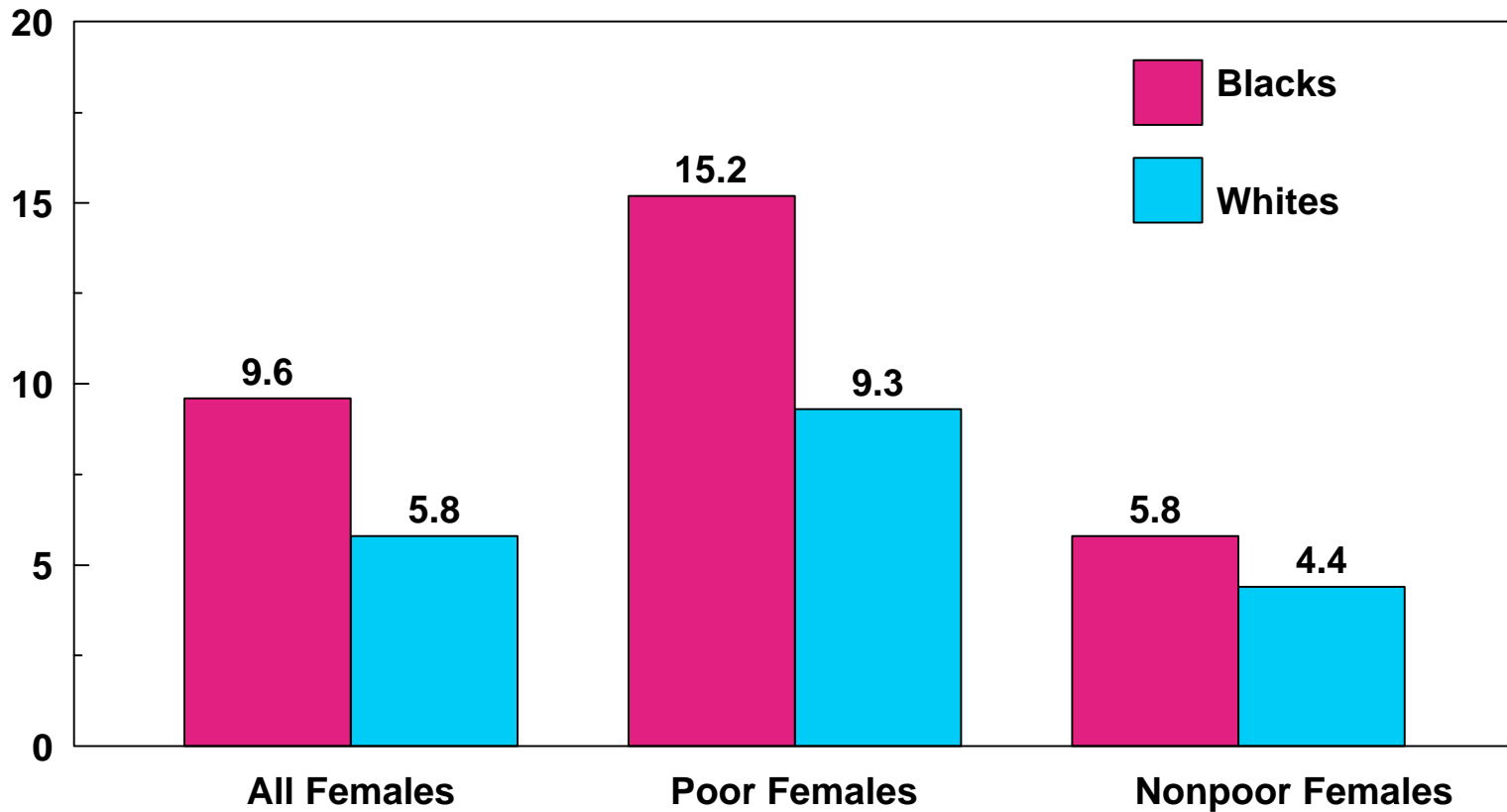
Source: Tennessee BRFSS, TDH, 1996

- Age made a slight difference, with somewhat higher percentages of younger adults failing to eat fruits and vegetables (79%-80%), compared to older adults, 65+ over (70%).
 - Low fruit and vegetable consumption was marked among the less well-educated and lower income adults.
 - Among Tennessee adults with no schooling or an elementary education alone, 85%-86% lacked fruits or vegetables in their daily diets, compared to 82% of adults with some high school, 75% of high school graduates, 71% of those with some college, and 67% of college graduates.
 - Ranging from 85% of those with incomes less than \$10,000 to 68% of those with incomes of \$75,000 or more, the prevalence of low fruit and vegetable consumption varied directly with income level.

Source: Tennessee BRFSS. TDH and CDC Division of Policy and Planning, Health Statistics and Information on Adult Behavior, 1996.

Percent of Adults Ever Diagnosed with Diabetes, Females, by Race and Poverty Status, Tennessee, 1993

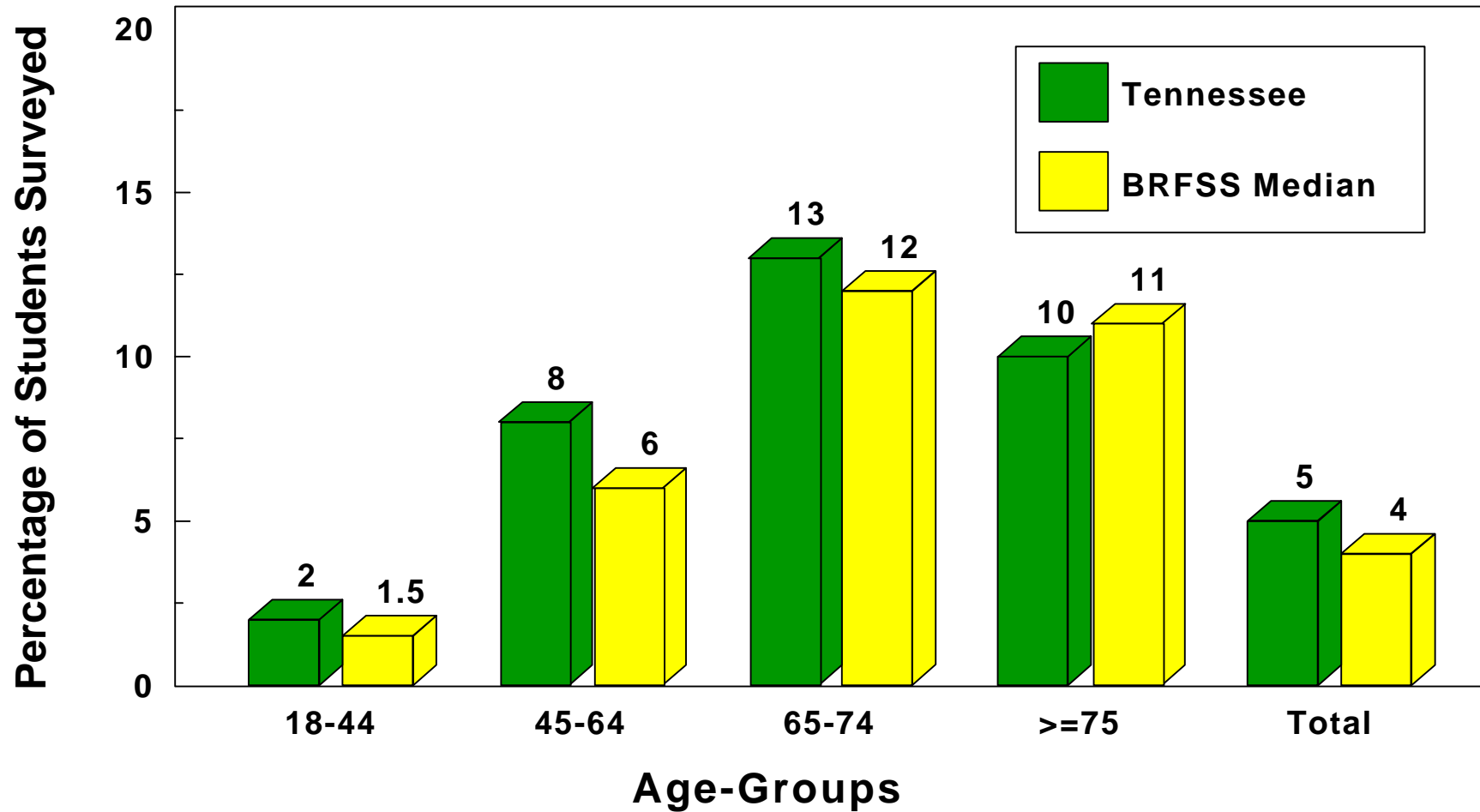
Percentage



Females Diagnosed with Diabetes by Poverty Status

Source: Tennessee ATOD High School Survey, 1995/
1997, CHRG and TDH BADA.

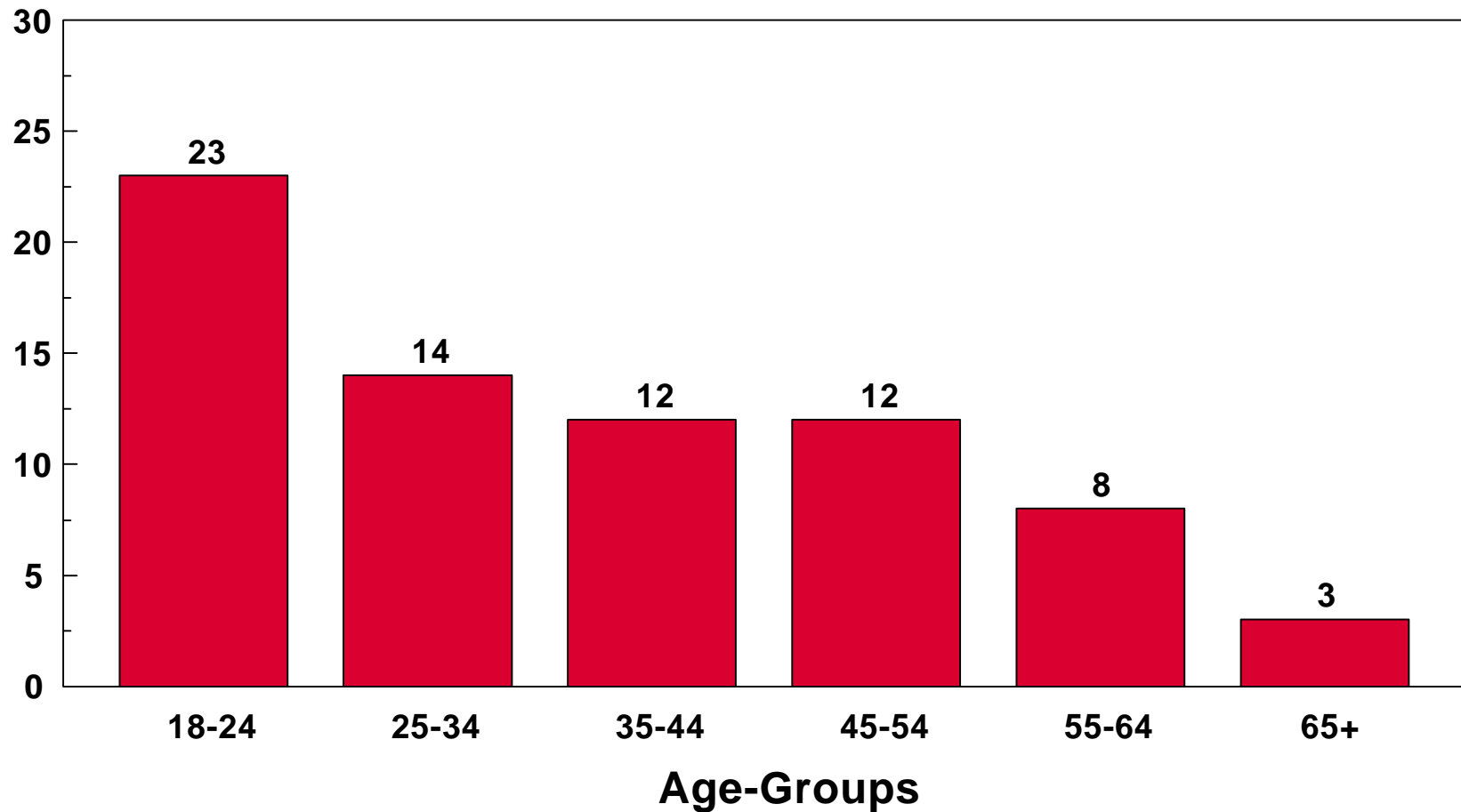
Prevalence of Diagnosed Diabetes Tennessee and BRFSS Median, 1994-1996



Source: Tennessee State Health Profile, 1998, CDC

Percent of Adults with No Health Insurance Plan, by Age, Tennessee, 1996

Percentage

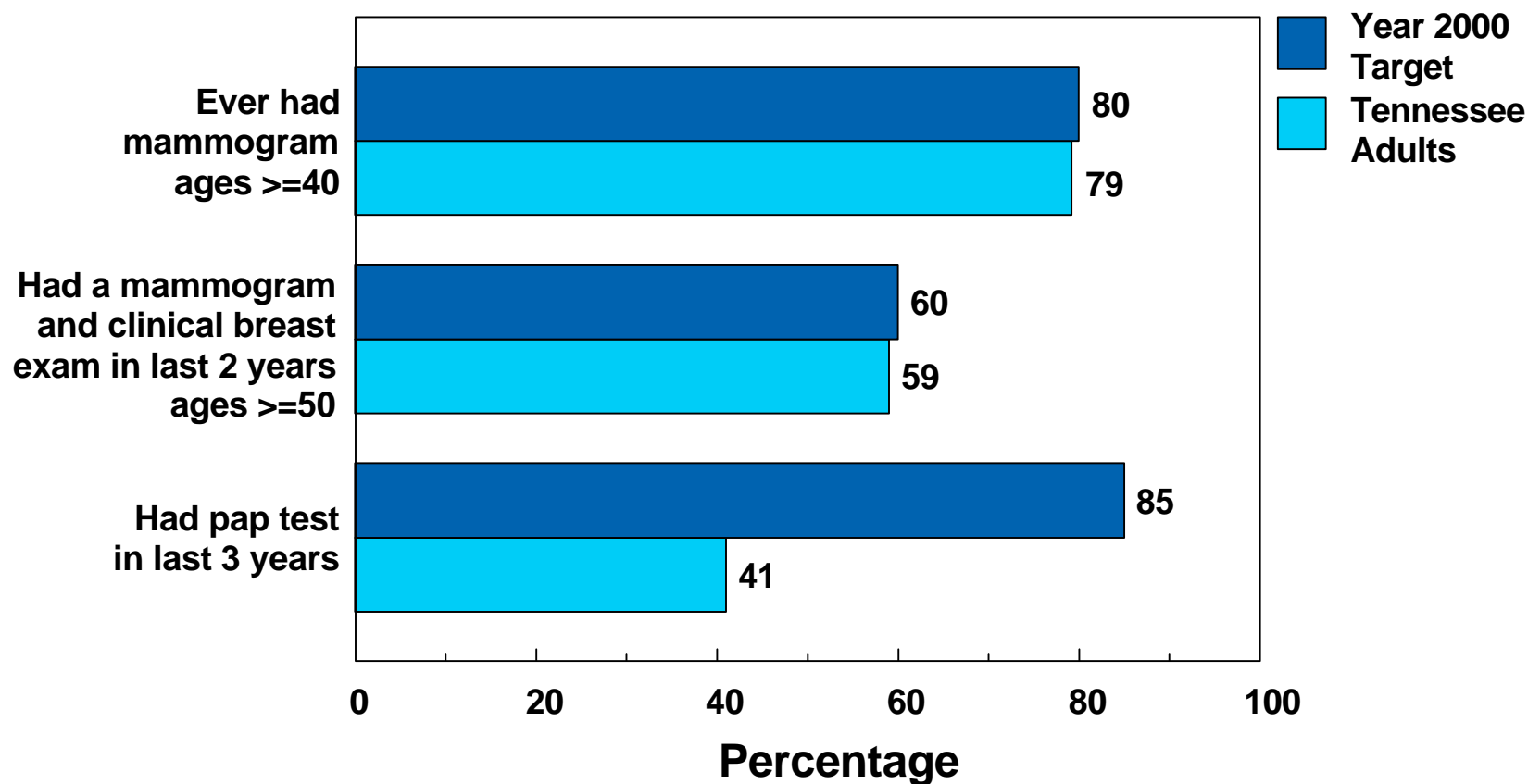


Source: Tennessee BRFSS, TDH, 1996

Tennessee Adults' Health Risks, 1996

Selected Behavioral Risk Prevalence and Target Year 2000 Objectives, Females Only

Selected Risk Factor

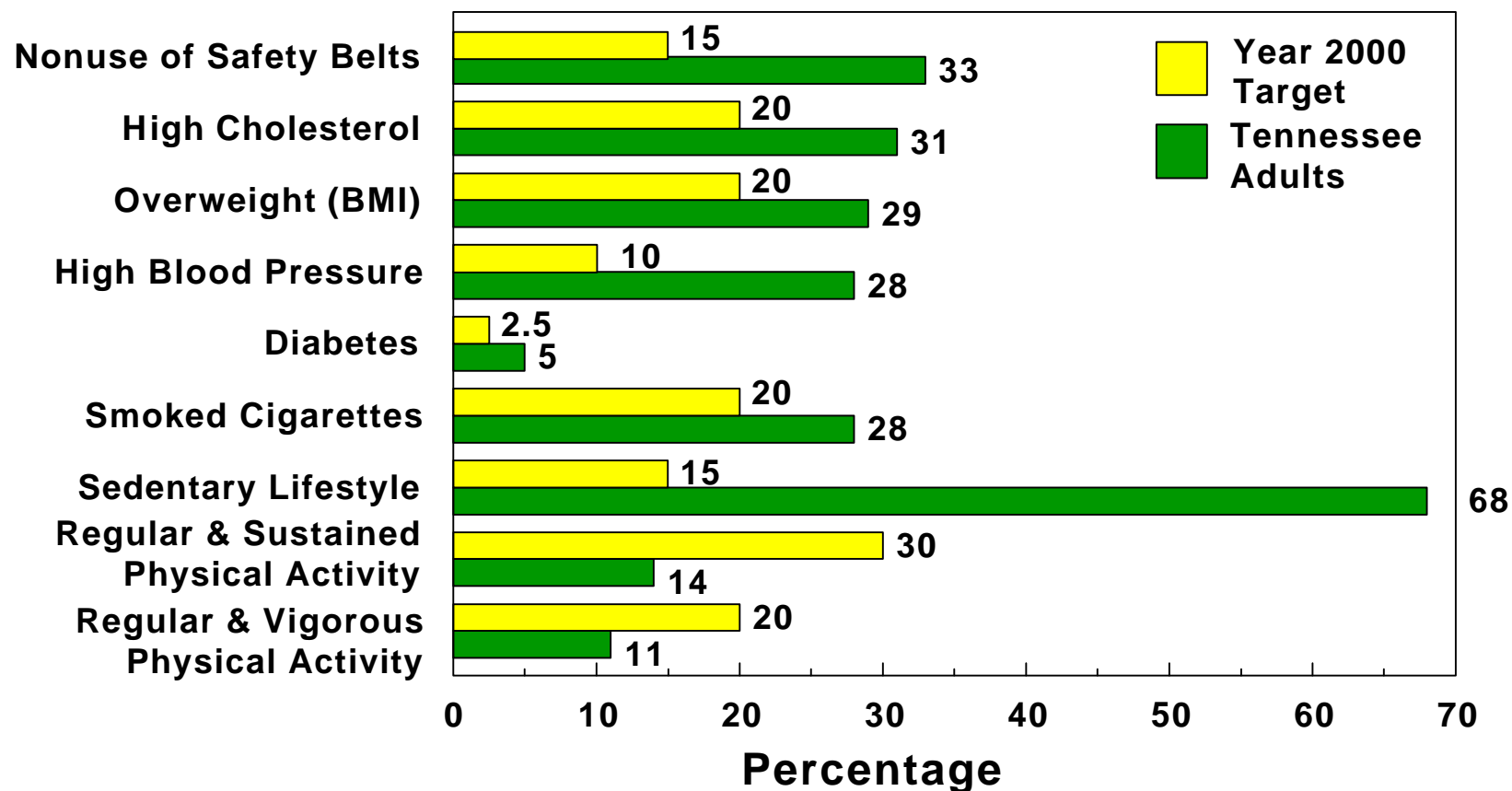


Source: Tennessee BRFSS, TDH, 1996

Tennessee Adults' Health Risks, 1996

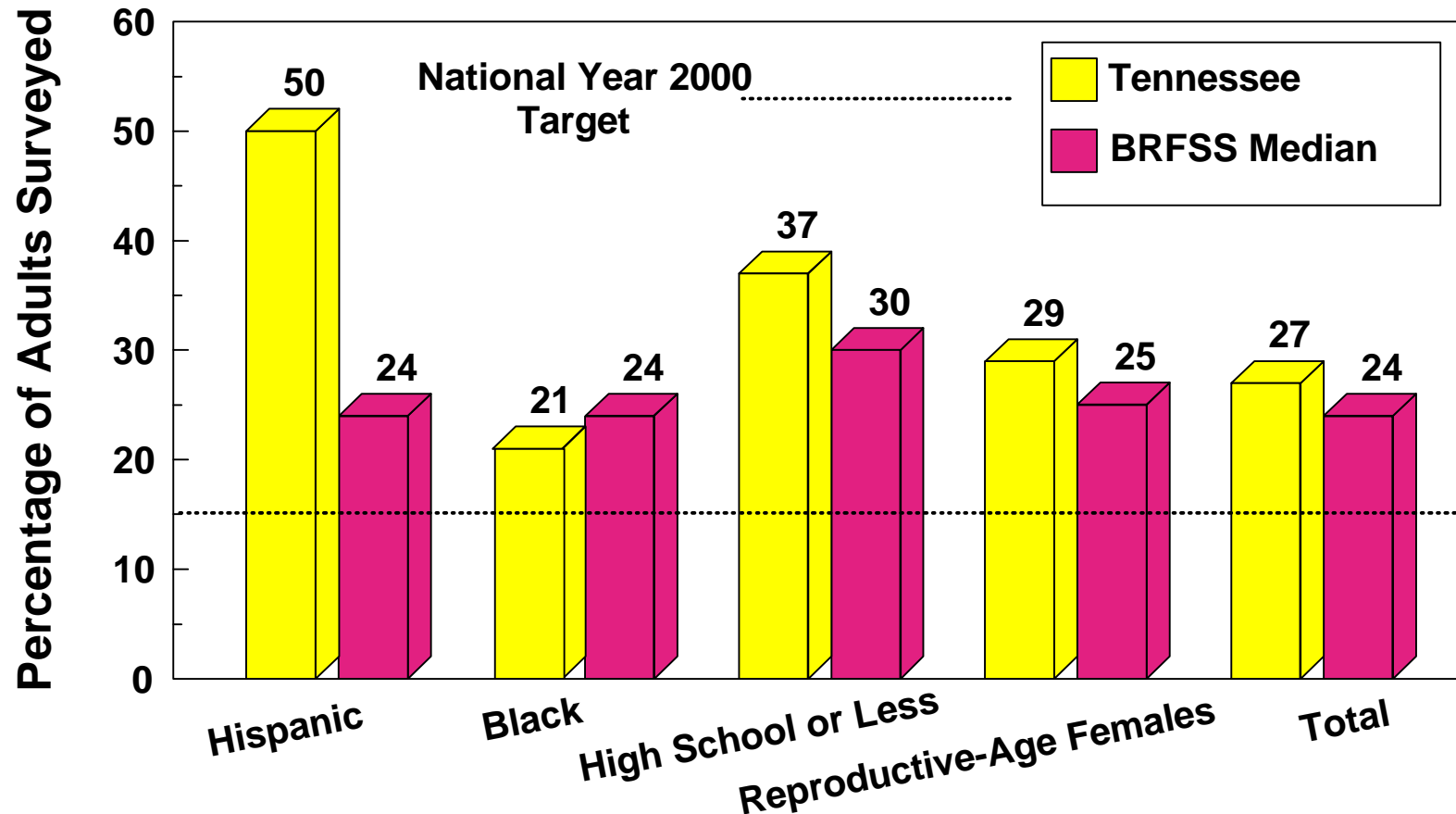
Selected Behavioral Risk Prevalence and Target Year 2000 Objectives, All Adults

Selected Risk Factors



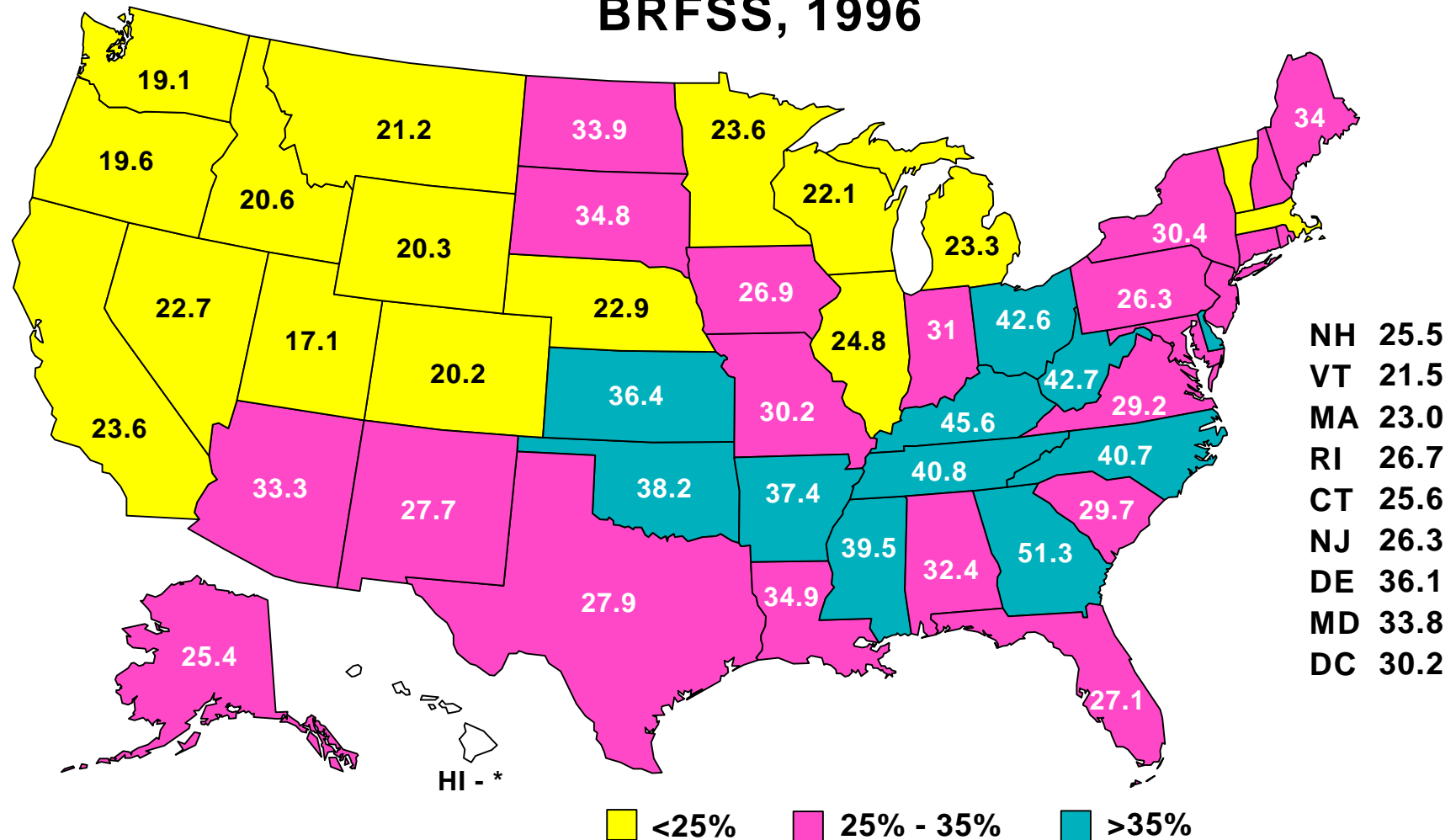
Source: Tennessee BRFSS, TDH, 1996

Smoking Prevalence in Selected Demographic Groups, Tennessee and BRFSS Median, 1996



Source: Tennessee State Health Profile, 1998, CDC

Prevalence of Physical Inactivity During Leisure Time, BRFSS, 1996

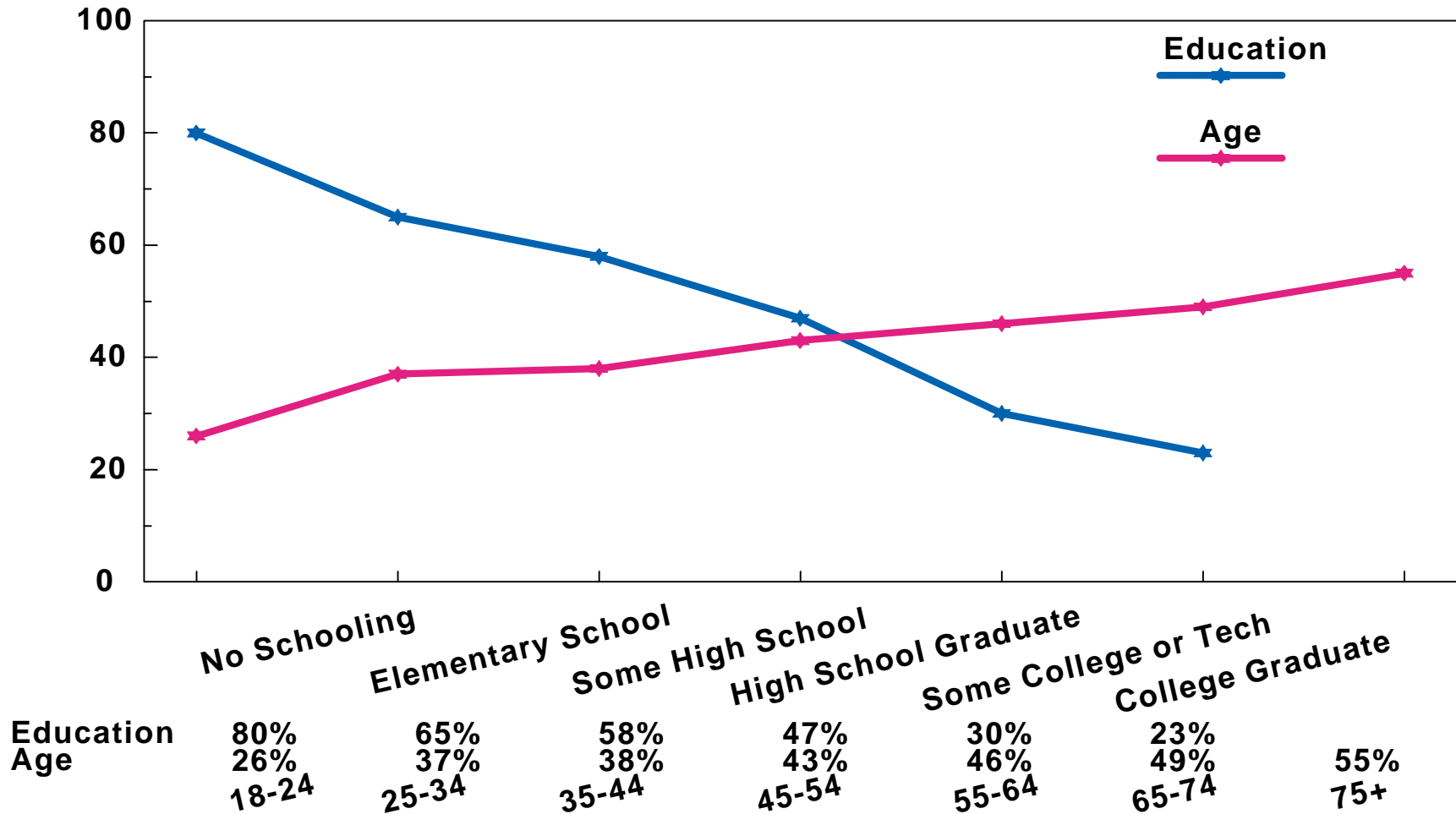


* Not available

United States BRFSS Median - 27.8%; National Year 2000 Target - 15%
Source: Tennessee State Health Profile, 1998, CDC.

Lack of Physical Activity among Tennessee Adults by Age and Education, BRFSS, 1996

Percentage



Source: Tennessee BRFSS, TDH, 1996.

VIOLENCE IN TENNESSEE -- MORTALITY (HOMICIDE/SUICIDE) AND MORBIDITY (ASSAULT, DEPRESSION, AND SUICIDE ATTEMPTS)

Homicide²⁰

- The age-adjusted homicide* rate for Tennessee for the period 1994-1996 was 11 per 100,000 population. This was 6% below the rate for the period 1990-1992. The Year 2000 target rate is 7.2 per 100,000 population. The age-adjusted homicide rate for black males in Tennessee was 41.5 per 100,000 for 1990-1992. It declined 9% to 37.7 for 1994-1996.
- For the period 1994-1996, the homicide rate for Tennessee children under 3 years of age was 5.9 per 100,000. This represented a decline of 3% since 1990-1992. The Year 2000 national target is 3.1 per 100,000.
- The homicide rate for black children under age 3 for 1994-1996 was 13.6 per 100,000, a 20% decline since 1990-1992. For 1994-1996 the rate for black children in this age- group was four times higher than the corresponding rate for white children. This compares with a six-fold differential for 1990-1992.

Weapons And Assaults -- Adolescent Violence

- As in 1995, 24% of Tennessee students in 1997 had carried a weapon such as a gun, knife or club in the 30 days preceding the survey. Male students were 4.5 times more likely than female students to have carried a weapon (41% versus 9%, respectively). Carrying weapons decreased by ascending grade level, with 9th graders most likely and 12th graders least likely to report carrying weapons. Twenty-seven percent of 9th graders, 24% of 10th graders, 23% of 11th graders and 20% of 12th graders carried weapons. This apparent drop by grade level is influenced by loss of students to school from 10th grade to 12th grade. School leavers may be more likely to engage in such risky behavior.
 - 8% of high school students carried a gun on one or more of the past 30 days with males students being more than 7 times more likely than female students to do so (15% versus 2%).
- One-third of students reported that they were in a physical fight at least once in the past 12 months. Male students (41%) were more likely than female students (26%) to have reported this behavior. Students in the 9th grade were more likely to report

²⁰Homicide here excludes deaths due to legal intervention. For the period 1994-1996, homicides attributable to legal intervention accounted for only 0.2% of all homicides. These are excluded for comparability with U.S. data. Data from the HIT/SPOT Web site include these deaths due to legal intervention.

physical fighting than students in the remaining grades. Forty-one percent of 9th graders reported this practice, compared to 31% of 10th and 11th graders and 23% of 12th graders. This grade effect is explained in part by school leaving or dropping out, which alone decreases the percentages of high risk behaviors among older students.

- Among Tennessee respondents, 3% reported that in the past 12 months they were injured in a physical fight and had to be treated by a doctor or nurse. More than twice as many males (5%) as females (2%) were so injured in 1997.²¹

Source: YRBSS, Tennessee, 1997, TDE.

Suicide

- The suicide rate for Tennessee youth, defined as the 15-19 year-old population, increased by 3% from 1990-1992 to 1994-1996. For 1994-1996, the rate was 10.2 per 100,000 population. This compares with the national target rate set for the Year 2000 Healthy People Objectives of 8.2 per 100,000. Between 1990-1992 and 1994-1996, the suicide rate for youths residing in nonmetropolitan areas rose by 31%, whereas it fell 22% for their metropolitan counterparts.
- The age-adjusted suicide rate for the Tennessee population was 12.3 per 100,000 in 1990-1992 and 12.1 in 1994-1996. This compares with the National Year 2000 target rate of 10.5 per 100,000. With a trend towards widening differentials, rates for whites of either sex exceeded those for blacks. In 1994-1996, rates for white males were 48% higher than those for black males. Rates for white females, however, were only 3% higher than corresponding rates for black females.
- The suicide rate for white Tennessee males ages 65 years and older declined 12% between 1990-1992 and 1994-1996. Nevertheless, the 1994-1996 rate of 44.9 was 13% higher than the Year 2000 national target rate for elderly white males of 39.2 per 100,000.

Suicide Risk Among High School Students

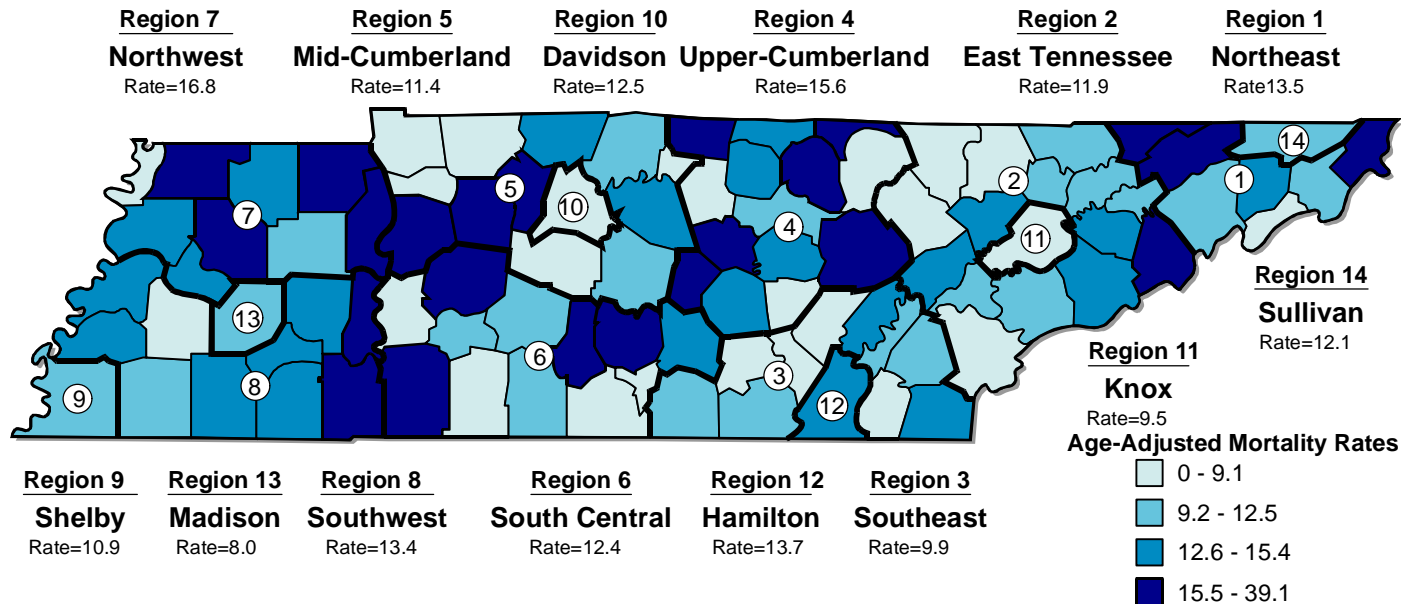
- According to data from the Tennessee YRBSS for 1997, 22% of high school students surveyed reported that they had considered attempting suicide in the past 12 months. More females (27%) than males (16%) reported considering suicide. Percentages declined by grade level from a high of 24% of 9th graders to 22% of 10th graders, 21% of 11th graders and 19% of students in 12th grade.

²¹YRBSS, Tennessee Department of Education, 1997.

- Seventeen percent of students reported making a plan about how they would attempt suicide. This represents nearly 80% of those considering suicide. Again more females (21%) than males (13%) reported making a suicide plan in the past 12 months.
- Actual suicide attempts were reported by 10% of students in the past 12 months. Reported attempts were twice as common among females (13%) as males (6%). Students in lower grades (9-11) were more likely report having attempted suicide than students in the 12th grade (10%-11% of the former, compared with 7% of the latter).
- Overall 3% of students reported having made a suicide attempt in the past 12 months that resulted in a poisoning or overdose requiring treatment by a doctor or nurse. Similar percentages of males and females reported such injuries (3%-4%). Again, 9th graders were more likely to report injury (5% versus 2% of 12th graders).
- The probabilities of a student in 1997 considering suicide were 1 in 5 (22%). Of those who considered suicide, about 8 in 10 made a plan. Of those who planned suicide, about 6 in 10 reported having attempted it, and of those, 3 in 10 reported being injured seriously enough to require medical care.

Source: YRBSS, Tennessee, Tennessee Department of Education, 1997.

ANNUAL AVERAGE AGE-ADJUSTED SUICIDE RATES PER 100,000 POPULATION BY COUNTY AND REGION, TENNESSEE, 1994-1996



Source: Tennessee Department of Health, Health Information and Statistics and Health Information Tennessee Web Site (server.to/hit), TDH-CHRG, June 1998.

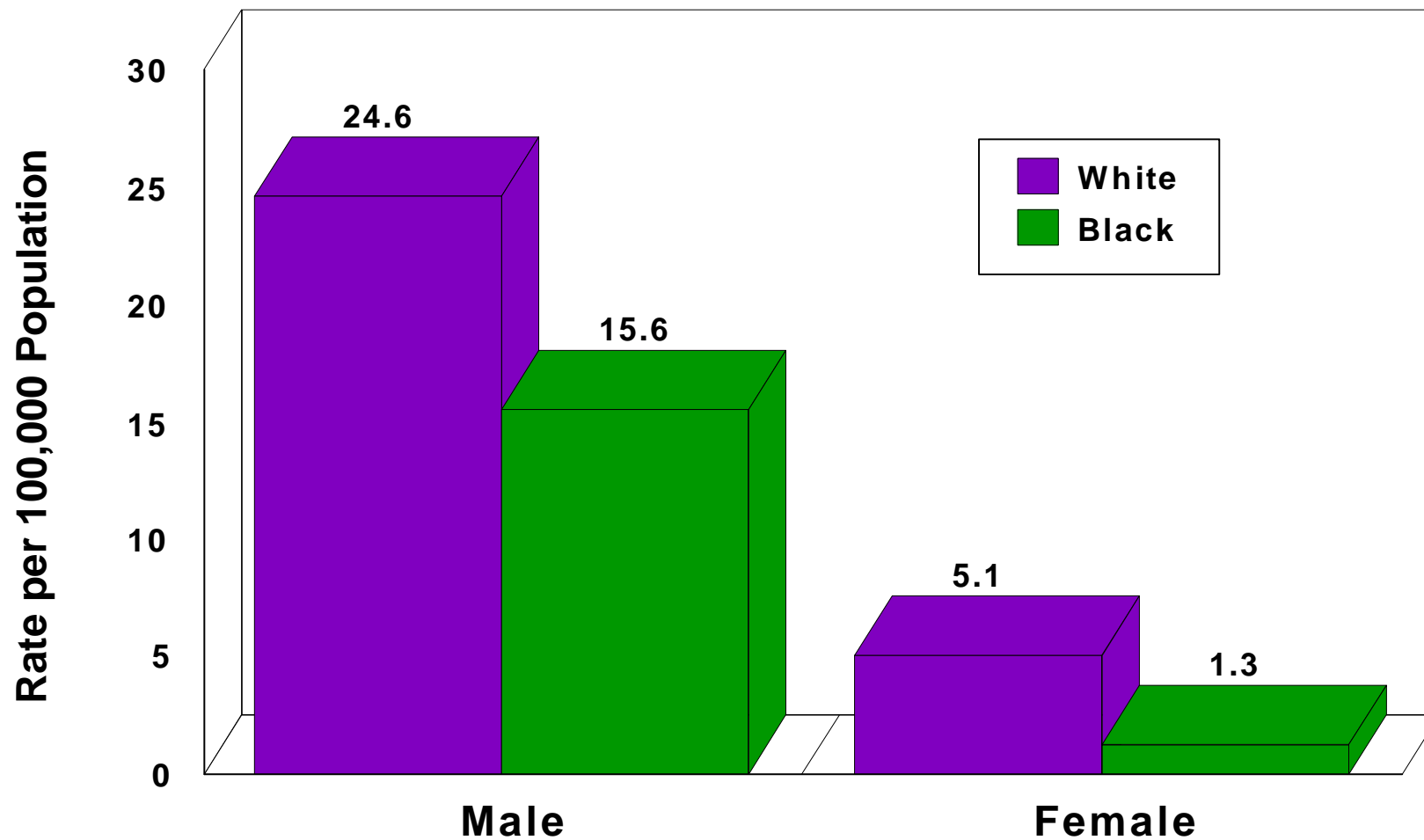
MORTALITY AND MORBIDITY RELATED TO MENTAL DISORDERS IN TENNESSEE: YOUTH AND ADULTS

- Suicide was the eighth leading cause of death in Tennessee in 1996. The suicide rate was 13.3 per 100,000 population (the age-adjusted suicide rate was 12.4). At 23 per 100,000, the male suicide rate was almost six times higher than the rate for females (4.4).
- Whites, especially males, have higher suicide rates than blacks. The suicide rate was 14.5 per 100,000 for whites and 8 per 100,000 for blacks. For white females, the suicide rate was 5.1, which was four times higher than the rate for black females. The white male suicide rate of 25 per 100,000 was 58% higher than the rate for black males.
- In 1996, the suicide rate for Tennessee males ages 20-34 years was 30 per 100,000, compared with the national target rate of 21 established under the Year 2000 Healthy People Objectives. Their rate was 43% higher than the target.
- In a 1995/1997 CHRGT-DH statewide survey, 13% of high school students in Tennessee reported having attempted suicide. Female students were 84% more likely than male students to report an attempt, and white students 23% more likely than black students.
- Of the student suicide attempters, 25% reported using alcohol or other drugs just prior to their attempt. This represents 3.2% of all students. A higher percentage of females reported consuming alcohol or other drugs prior to the attempt than did males, and more whites did so than blacks.
- Students residing in poverty households constituted an especially high-risk group for suicide attempts. Twenty-six percent of poor white female students reported a suicide attempt as did 16% of their black counterparts. Respective figures for white and black males were 14% and 9%.
- Twenty-two percent of high school students reported that they often or almost always feel depressed. There is little variation by race. But more females (28%) reported such depression than males (16%).
- Poverty and mental health symptoms were linked. Poor high school students (33%) were more likely than non-poor students (20%) to report that they often or almost always feel depressed. Forty-two percent of poor white female students reported such depression compared with 24% of their male opposites. Respective figures for black females and males were 33% and 19%.

- In the 1993 CHRG-TDH statewide adult household survey, 29% of Tennessee adults reported being bothered by anxiety or depression within the past 30 days. This figure rose to 48% for adults living in poverty. Fifty-one percent of poor adult females reported being bothered by anxiety or depression within 30 days compared with 40% of poor adult males. Corresponding figures for black adult females and males were 41% and 35%, respectively.
- White males ages 65 years and older were at very high risk for suicide. Their 1994-1996 rate of 44.9 per 100,000 was ten times higher than the corresponding rate for white females, and 57% higher than that for the overall Tennessee population (19.1). But their rate declined 12% between 1990-1992 and 1994-1996 from 50.9 to 44.9 per 100,000.
- The suicide rate for white males 65 years and older in metropolitan areas of Tennessee declined 31% to 37.2 per 100,000 from 1990-1992 to 1994-1996. By contrast, the corresponding decline in nonmetropolitan areas was less than 1%. The nonmetropolitan rate for the period 1994-1996 was 49 per 100,000. Compared to the National Year 2000 target rate for elderly white males of 39.2 suicides per 100,000 or lower, Tennessee's rate was about 15% higher in 1994-1996 at 44.9 per 100,000.

Source: Tennessee Mortality Data, TDH. Tennessee ATOD High School Survey, 1995/1997, CHRG-TDH. Tennessee Alcohol and Other Drug Needs Assessment Survey of Adults, 1993, CHRG-TDH.

Suicide Rates by Race and Sex: Tennessee, 1996



Source: Tennessee Department of Health
Health Statistics and Information

High School Students Residing in Poverty Households Reporting Suicide Attempts by Race and Sex: Tennessee, 1997



Source: TN ATOD High School Survey, CHRG-TDH, 1995/1997

COMPARISON OF SELECTED COMMUNICABLE DISEASE RATES, TENNESSEE AND THE U.S., 1996

- In 1996, Tennessee's rates of gonorrhea, syphilis, chlamydia, hepatitis B and tuberculosis were all higher than in the U.S. as a whole.²²
- Chlamydia case rates were 31% higher in Tennessee (246.7 per 100,000) than in the U.S. (188.1) in 1996.
- In 1996, gonorrhea rates were 79% higher in Tennessee than in the U.S., at 220.1 per 100,000 compared to 122.8.
- Both primary and secondary syphilis prevalence and the prevalence of total syphilis in all forms were substantially higher in Tennessee than in the U.S. in 1996. Primary and secondary syphilis cases per 100,000 population were 3.7 times higher in Tennessee (15.9) than case rates in the U.S. (4.3) in that year. Total syphilis rates were 2.2 times higher in Tennessee than nationally (43.5 versus 20, respectively).
- Hepatitis B was also more prevalent in Tennessee in 1996, exceeding by 2.4 times the national rate. Tennessee's 1996 rate of hepatitis B was 9.7 per 100,000, while the U.S. rate was 4 per 100,000.
- Tuberculosis case rates were somewhat (19%) higher in Tennessee, at 9.5 compared to the U.S. tuberculosis rate of 8 per 100,000 in 1996.
- The Southeastern states, including Tennessee, had excess 1996 STD rates, especially for chlamydia, gonorrhea, syphilis and hepatitis B, compared to other regions of the U.S.
- In 1996, AIDS case rates were lower by 38% in Tennessee than in the U.S. (15.5 compared to 25.2 per 100,000).

Source: MMWR 1996. Vol. 45#53, CDC, 1996.

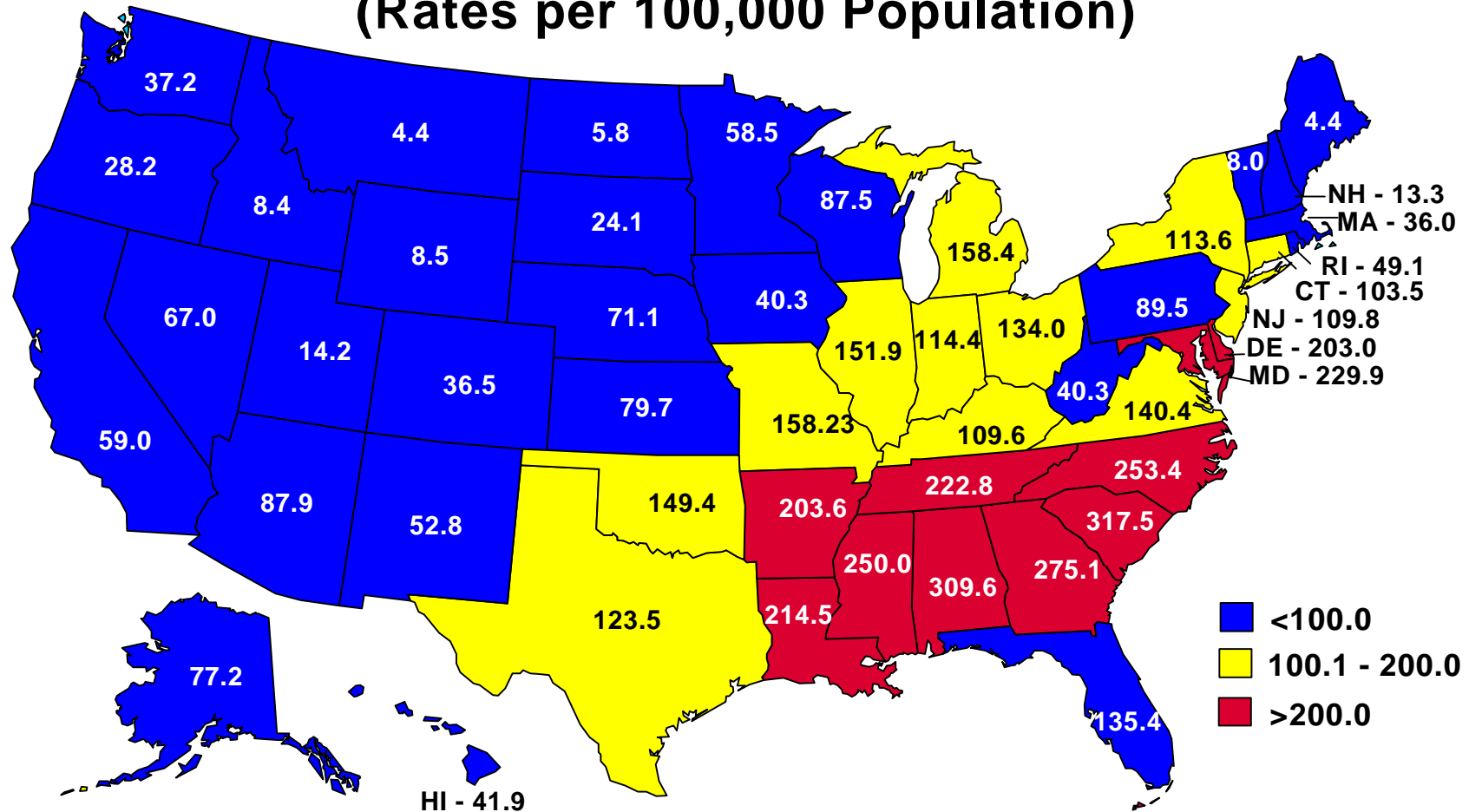
²²Based on final totals as of July 25, 1997, unless otherwise noted.

Selected Communicable Diseases, 1996

Selected Diseases	U.S.		Tennessee		Percent difference in rates
	N	Rate	N	Rate	
AIDS	66,885	25.2	826	15.5	-38%
Chlamydia	498,884	188.1	13,125	246.7	+31%
Gonorrhea	325,883	122.8	11,709	220.1	+79%
Syphilis, all forms	52,976	20.0	2,315	43.5	+118%
Primary and secondary syphilis	11,387	4.3	850	16.0	+272%
Hepatitis B	10,637	4.0	516	9.7	+143%
Tuberculosis	21,337	8.0	504	9.5	+19%
Population 1996 (in millions)	265,284		5,320		

Source: Summary of Notifiable Diseases, U.S., 1996. MMWR Vol. 45#53, CDC, 1996.

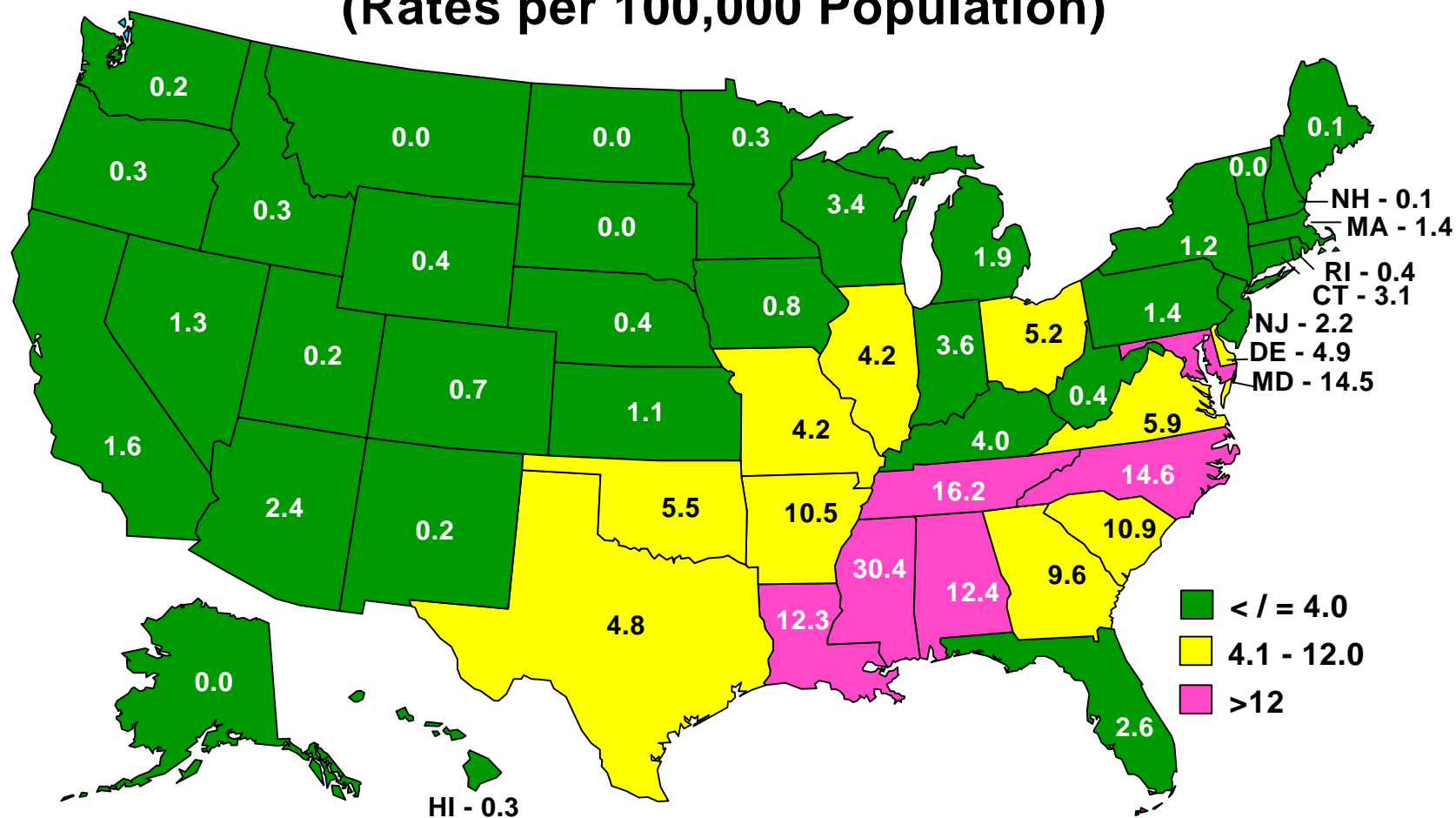
Reported Cases of Gonorrhea, United States, 1996 (Rates per 100,000 Population)



United States - 124; National Year 2000 Target - 100

Source: Tennessee State Health Profile, 1998, CDC.

Reported Cases of Primary and Secondary Syphilis, United States, 1996 (Rates per 100,000 Population)



United States - 4.3; National Year 2000 Target - 4.0

Source: Tennessee State Health Profile, 1998, CDC.

HIV/AIDS in Tennessee, 1997²³

- From 1982 through 1997, a total of 6,655 Tennesseans were reported with HIV disease that progressed to AIDS. Of these persons, 3,139 were living with AIDS. Another 4,446 Tennesseans have been reported with HIV-only (not AIDS) since HIV reporting began in 1992.
- All 95 counties have reported at least one person with HIV disease.
- Comparisons of HIV-only cases, which represent more recent infections, to AIDS cases, which represent persons infected in the past, indicate increased disease among women, blacks, and persons at risk due to heterosexual intercourse or needle sharing related to injecting drug use.
- A total of 779 Tennesseans were reported with their earliest HIV positive test date in 1997 and with no clinical indicators of AIDS at initial report. Of these, 32% were females, and 62% were black.
- Six hundred and fifteen or 79% of the above group had an identified risk of exposure as follows: 51% -- men having sex with men, 30% -- heterosexual intercourse, 15% -- needle sharing and injecting drug use, 3% -- men having sex with men and injecting drug use combined, and 1% -- receiving blood products.
- Approximately 1 in 4 Tennesseans reported with HIV infection was between the ages of 13 and 25 at the time of their HIV test. Persons testing HIV positive in their early 20's were possibly infected as teens.
- A decline has been observed in the number of new cases of infants developing HIV/AIDS due to perinatal exposure (i.e., being born to an HIV infected mother).
- From 1993 through 1997, 335 HIV-infected women gave birth to 387 HIV sero-exposed infants. Fifty-two or 13.4% of these sero-exposed infants would be expected to develop HIV infection based on previous studies. So far only 27, or 7%, of these infants have been reported with HIV infection and/or an AIDS diagnosis. Because it can take up to 18 months to confirm HIV infection in a perinatal exposed infant, additional infants born during this period may be reported in the future. Numbers of infected infants by year of birth and reported through April 1998 are as follows: 1993=14, 1994=7, 1995=4, 1996=2, and 1997=0. Numbers of infected infants by year of report, regardless of when born, and reported through

²³This section was summarized from a report authored by Herb Stone. For more information, please contact: Herb Stone, STD/HIV Program, Surveillance Section, Tennessee Department of Health, 615-532-8495.

April 1998 are as follows: 1993=19, 1994=13, 1995=17, 1996=2, and 1997=3. These declines are likely to be due to expanded voluntary HIV counseling and testing of all pregnant women and to advances in medical care, including use of AZT, for HIV infected pregnant women and their infants.

- The sharp decline in reported deaths due to AIDS has continued. From 1995 to 1996, deaths due to AIDS declined by 23% (from 529 to 406 deaths). Deaths declined again in 1997 by 30% to 286 deaths from 406 deaths in 1996. Prior to 1995, deaths due to AIDS were increasing substantially each year resulting in AIDS being a leading cause of death for young adults at that time. Declines have been attributed to 1) better HIV intervention programs which have slowed the overall growth of the epidemic, and 2) advances in medical treatments that slow the progression of HIV disease and prevent opportunistic infections. The use of protease inhibitor drugs and combination anti-retroviral therapies particularly hold promise to advance the clinical management of HIV disease.
- AIDS incidence (i.e., new cases of AIDS diagnosed each year) has leveled off since the beginning of 1995. Provisional data for 1997 suggest a decline in new AIDS cases for the year. Adjusting for reporting delay²⁴ and based on reporting through the first quarter of 1998, an estimated 855 persons were diagnosed with AIDS in 1996 compared to an estimated 879 diagnosed in 1995.
- Historically, there was a rapid growth in new AIDS cases each year prior to the leveling of incidence beginning in 1995. This growth peaked in 1993, due to the expansion of the AIDS case definition to include HIV infected persons with a low CD4 count. During 1994, a stabilizing in reporting of new AIDS cases led up to the current period of level, and, possibly declining, incidence.
- The incidence of severe clinical AIDS, as reflected in the diagnosis and reporting of opportunistic infections, has declined since the beginning of 1995. The number of persons diagnosed each year with an AIDS opportunistic infection since 1995 and reported through April 1998 is as follows: 1995=480, 1996=337, and 1997=252. These changes are related to better intervention programs and better medical treatment for persons with HIV disease.
- Recent estimates of HIV prevalence suggest that 10,000 to 12,000 Tennesseans were living with HIV through 1997. These figures include all persons currently

²⁴Diagnosed cases that have not been reported are accounted for based on adjustments made related to past patterns of late reporting. Because adjusting for reporting delays becomes less accurate for more recently diagnosed cases, estimates of 1997 AIDS incidence are incomplete.

infected with HIV and those living with AIDS.²⁵ A "best guess" for new HIV infections occurring each year (i.e., incidence) in Tennessee continues to be approximately 1,000. With stable HIV incidence, and with persons with HIV disease living healthier and longer, increases in HIV prevalence are likely in the future.

Source: Tennessee Department of Health, STD/HIV Program, Surveillance Section.

²⁵While these figures are lower than previous estimates, they do not represent a decrease in HIV incidence or prevalence. Instead, the lower estimates are due to refined methodology and the use of more current data to make the estimates.

ADOLESCENT PREGNANCY IN TENNESSEE: PREGNANCY RATES, BIRTH RATES, AND ADVERSE CONDITIONS, 1990-1996

- The Year 2000 target pregnancy rate²⁶ among females 14 and younger for Tennessee was to be no more than 2.5 per 1,000, and that for females 15-17 to be no more than 55 per 1,000. The first time Tennessee was able to meet both objectives was in 1996. The pregnancy rate among 10-14 year-olds was 2.5 per 1,000 in 1996 compared to 2.6 in 1995. Among 15-17 year-olds, the rate was 51.9 per 1,000 down from 55.8 in 1995.
- Fewer Tennessee teenagers (ages 10-17) became pregnant in 1996 compared to 1995, (6,138 and 6,267 pregnant teenagers, respectively). Tennessee's adolescent pregnancy rate declined to a new all-time low in 1996. The pregnancy rate was 21.1 per 1,000 females aged 10-17, down from 22.0 in 1994 and 21.8 in 1995.
- The adolescent pregnancy rate was nearly 3 times higher among blacks than whites. Rates were 15.6 per 1,000 among white adolescent females and 42.2 per 1,000 among their black counterparts.
- Less overall decline was observed for adolescent birth rates from 1990 to 1996. Overall, adolescent birth rates decreased from 17.7 per 1,000 adolescent females in 1990 to 16.3 per 1,000 in 1996. This decline amounted to less than half the decline in pregnancy rates among adolescents in the period (an 8% decline in birth rates compared to a 17% decline in pregnancy rates).
- Adolescent birth rates declined slightly more among blacks (9%) than whites (8%) from 1990 to 1996. This runs counter to trends observed by race in adolescent pregnancy rates. The rates for whites declined by more (19%) than did the rate for blacks (15%).
- Growth in the population of females ages 10-17 has been estimated at 7% for both whites and blacks from 1990-1996, making such declines more compelling.
- Percentages of births to adolescent females ages 10-17 in which no prenatal care was received declined among blacks, but not among whites or the total population. In 1996, 2.5% of adolescent mothers received no prenatal care, including 1.8% of whites and 3.5% of blacks. Overall, percentages declined from 1990 to 1996 by 19%. Percentages of births among blacks receiving no prenatal care declined by 29%, while increasing by 6% among whites.

²⁶Pregnancies include live births, fetal deaths and abortions reported the TDH.

- The percent of births to adolescents ages 10-17 in which prenatal care was inadequate²⁷ decreased over the seven-year period from 13.2% in 1990 to 9.8% in 1996, a decline of 26%. The percent of births to white adolescent females whose prenatal care was inadequate decreased from 9.1% in 1990 to 6.9% in 1996, a 24% decrease. Among black adolescent females, the prevalence of inadequate prenatal care dropped by 29%, from 18.9% in 1990 to 13.4 % in 1996.
- Overall, 12.3% of births occurred to mothers ages 10-17 who had received either little or no prenatal care in 1996. This compares to 16.3% in 1990 – a one-quarter decline, with a larger decline among black females (29%) than white females (19%). Percentages of births with no or inadequate maternal prenatal care was 8.7% among whites and 16.9% among blacks in 1996.
- Low weight births have remained stable as a percentage of all births to females aged 10-17 in Tennessee between 1990 and 1996 (11.1% in 1990 compared to 11.4% in 1996). Low weight births increased among white females from 8.7% to 9.4% of births from 1990-1996, but decreased very slightly from 14.5% to 14.1% of births among black adolescents.
- The majority of births to adolescent females were to unwed mothers. Births to unwed females ages 10-17 increased by 14% from 73.1% in 1990 to 83.2% in 1996. The birth rate among unwed black adolescents remained very high and stable over time (98%-99%), while birth rates among unwed white adolescents increased from 54.7% of all births in 1990 to 72% of births to adolescents in 1996. The latter is an increase of 32% over 7 years.
- Counties in Tennessee reporting the highest adolescent pregnancy rates in 1996 were Crockett, Haywood, Lauderdale, Trousdale and Shelby Counties. The lowest rates were reported in Clay, Fentress, Moore and Williamson Counties.
- In 1996, 30% of births to females ages 10-17 who were reported to have consumed alcohol during pregnancy had abnormal conditions or congenital anomalies, compared to 10% of births to all adolescent females. The reported prevalence of adverse birth outcomes related to adolescent alcohol use was thus triple the overall prevalence for births to all adolescent females and more than double the prevalence among births to older females who consumed alcohol during pregnancy (13%).²⁸

²⁷Prenatal care is defined as inadequate based on criteria defined in the Kessner Index, which classifies prenatal care on the basis of the number of prenatal visits, gestational age, and the trimester care began. In addition to the specific number of visits indicated for inadequate care, all women who started their care during the third trimester (28 weeks or later) were considered to have received inadequate care.

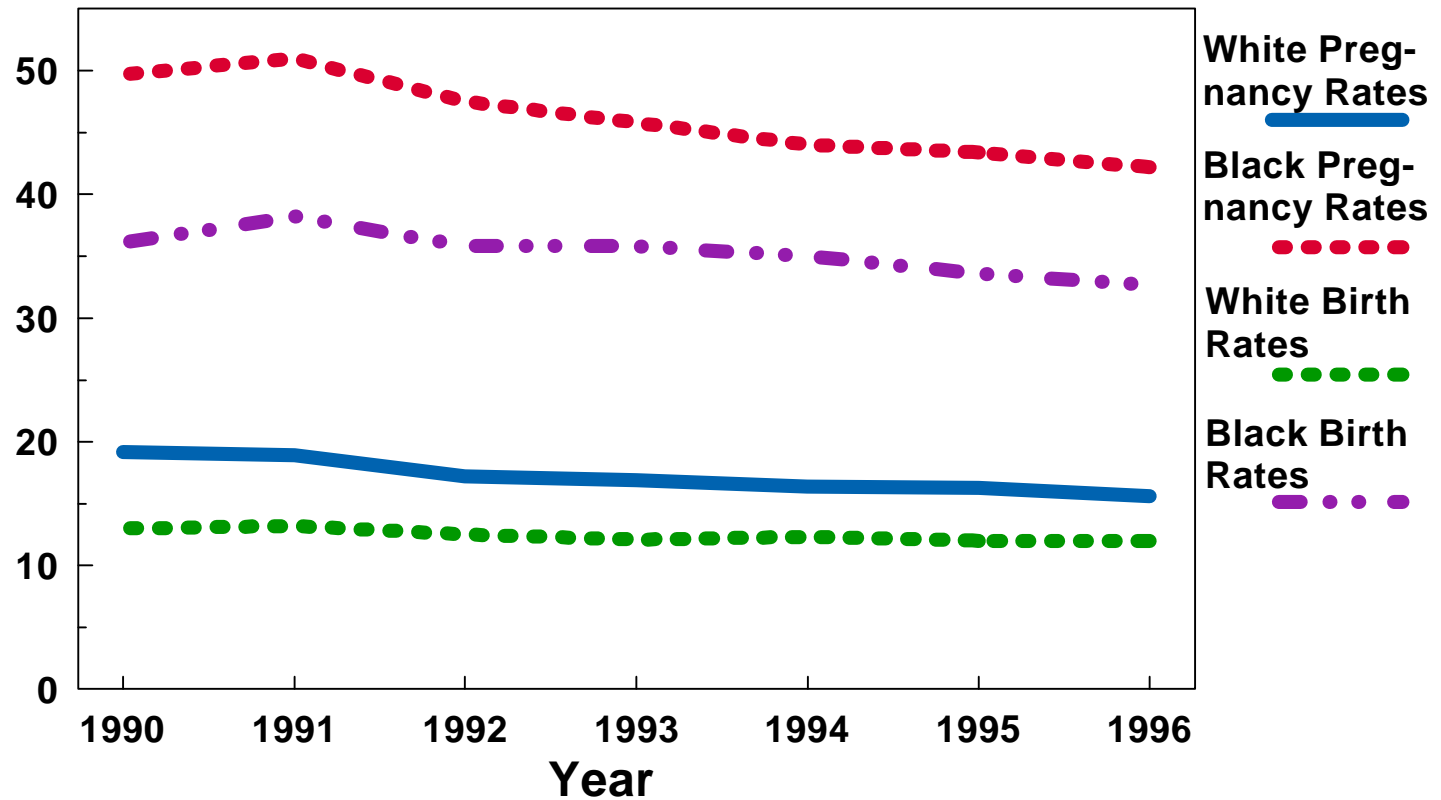
²⁸Data on maternal alcohol or tobacco use from birth certificates is of uncertain quality and completeness, and underreporting is likely.

- In 1996, 13% of births to adolescent females who reported having smoked cigarettes during pregnancy were low weight, compared to 11% of births to all adolescent mothers. The same prevalence attaches to births in which maternal alcohol use was reported.
- Among older mothers, low weight births were more likely among both reported smokers and drinkers -- 8.7% of births to all females aged 18 and over were low weight births compared to 13% of births to smokers, and 17% of births to females who drank alcohol during pregnancy.

Source: Tennessee Adolescent Pregnancy Summary Data, 1996. Bureau of Health Service, TDH, October, 1997. Health Information Tennessee Web site - Birth Preview Data, 1996, CHRG-TDH.

Adolescent Birth Rates (Births per 1000 Females 10-17) Compared to Adolescent Pregnancy Rates by Race and Year, Tennessee, 1990-1996

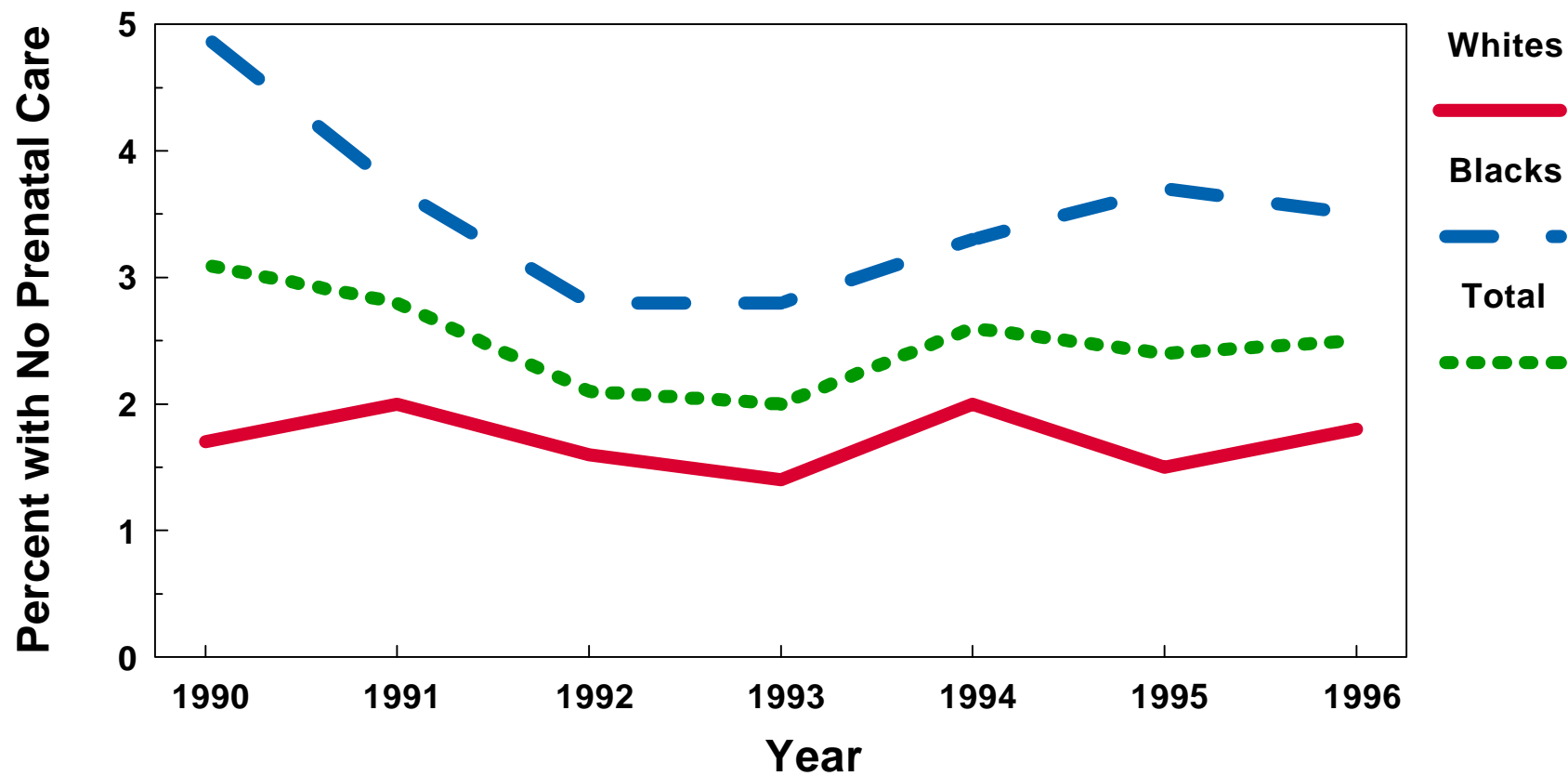
Adolescent Birth and Pregnancy Rates



White Pregnancy Rates	19.2	18.9	17.2	16.9	16.4	16.3	15.6
Black Pregnancy Rates	49.7	51	47.5	45.8	44	43.4	42.2
White Birth Rates	13	13.2	12.5	12.1	12.3	12	12
Black Birth Rates	36.1	38.2	35.8	35.8	35	33.6	32.7

Source: Tennessee Adolescent Pregnancy Summary Data, 1996. TDH, October 1997.

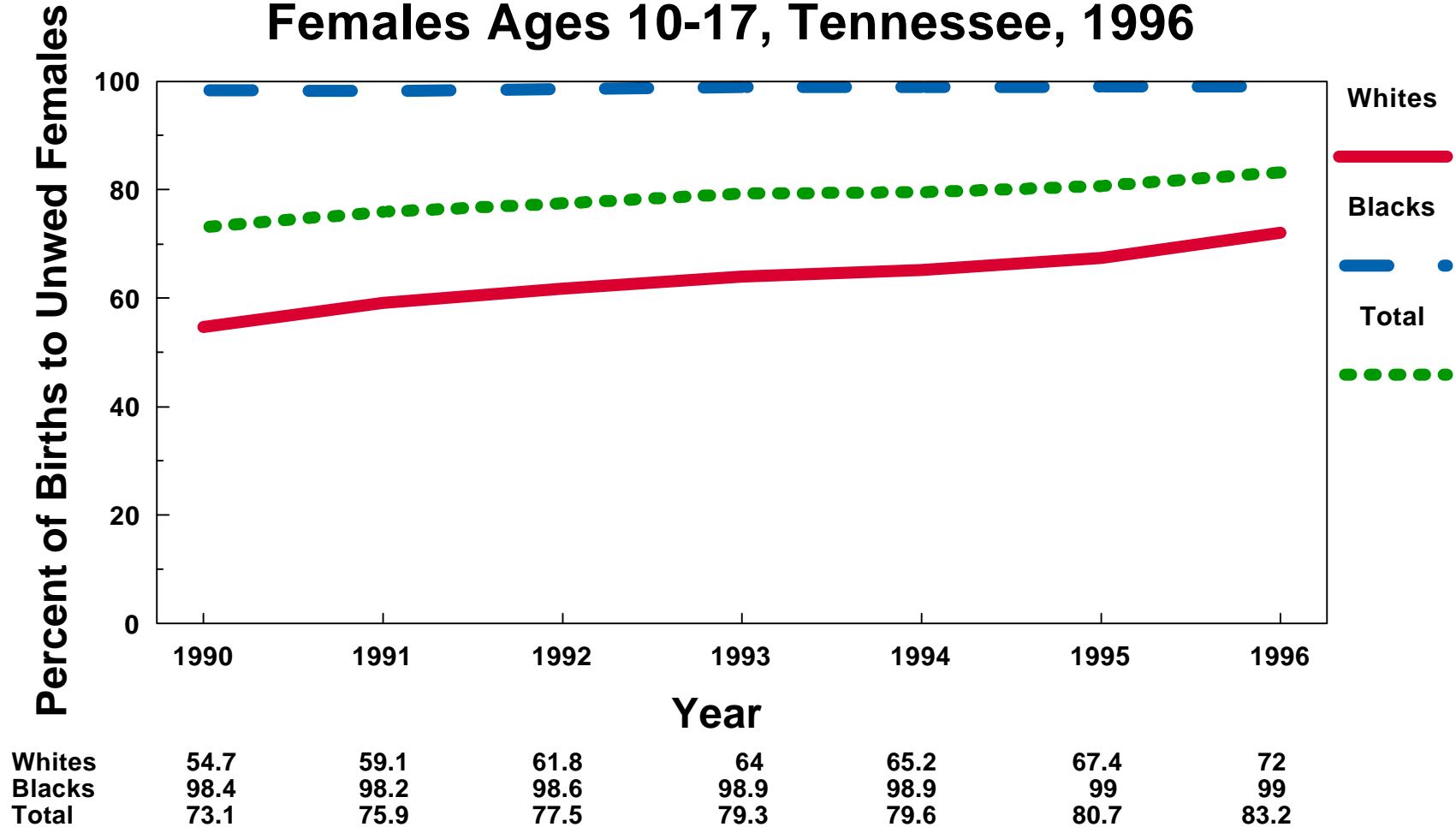
Percent of Adolescent Births to Females Ages 10-17 with No Prenatal Care, Tennessee, 1996



Whites	1.7	2	1.6	1.4	2	1.5	1.8
Blacks	4.9	3.7	2.8	2.8	3.3	3.7	3.5
Total	3.1	2.8	2.1	2	2.6	2.4	2.5

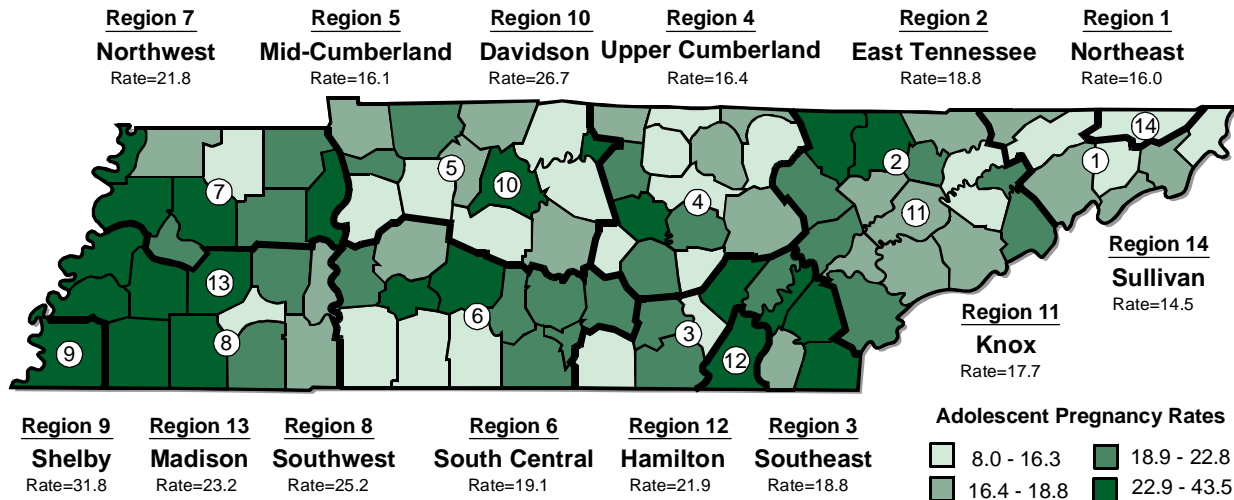
Source: Tennessee Adolescent Pregnancy Summary
Data, 1996. Bureau of Health Services, Tennessee
Department of Health, October 1997.

Percent of Adolescent Births to Unwed Females Ages 10-17, Tennessee, 1996



Source: Tennessee Adolescent Pregnancy Summary
Data, 1996. Bureau of Health Services, Tennessee
Department of Health, October 1997.

ANNUAL AVERAGE ADOLESCENT PREGNANCY RATES PER 1,000 FEMALES AGED 10-17 BY COUNTY AND REGION, TENNESSEE, 1994-1996



Source: Tennessee Department of Health, Health Statistics and Information and Health Information Tennessee web site (server.to/hit), TDH-CHRG June 1998.
Note: Pregnancies include live births, fetal deaths, and abortions.

Statewide Rate = 21.7

TENNCARE ENROLLMENT AND ELIGIBILITY AS OF DECEMBER 1997 AND FEBRUARY 1998

- Statewide 1,208,334 persons were enrolled in TennCare as of February 1998.
- In the 1990 Census, about 37% of Tennessee's population was below 200% of poverty. A higher percentage of rural than metropolitan Tennessee residents were below poverty in 1989--39% compared to 34% in the four largest metropolitan counties.²⁹
- The highest percentage of the metropolitan population below poverty in 1989 resided in Shelby County (37%). Southwest and Upper Cumberland Regions, with 47% of the regional population below poverty each at baseline, were the rural regions with the highest poverty levels. Lowest poverty prevalence was observed for the Mid-Cumberland Region at 34% below poverty.
- Counties with the highest prevalence of poverty were Hancock (67%), Fentress (66%), Scott (62%), Johnson (61%), Grundy (60%), and Pickett (59%). Counties with the lowest prevalence of poverty were Williamson (16%), Wilson (23%), Rutherford (27%), Sumner (27%) and Cheatham (29%).
- Although some enrollees on TennCare are above 200% of poverty, comparisons of the TennCare enrollment population and population at less than 200% poverty can be made.
- A somewhat lower percentage of rural residents who were below 1989 poverty levels were enrolled in TennCare as of February 1998 (67% compared to 73% in metropolitan counties and 69% statewide).
- Of the 4 large metropolitan regions, Knox County had the lowest percentage of the poor enrolled in TennCare (61%), while Shelby and Davidson had the highest percentages (78% and 75% respectively). Hamilton County had 66% coverage.
- The nonmetropolitan region with the highest percentage of poverty population relative to TennCare enrollees was East Tennessee (73%), while the lowest was Northwest Tennessee (61%).
- Counties range in TennCare penetration or coverage rates from 51% in Giles and 52% in Weakley Counties to 82% in Scott and Meigs Counties.

²⁹Throughout this section, metropolitan regions include only the largest four counties. Population data for 1990 used to compute percentages are from The Health Access Plan Update, 1998, TDH.

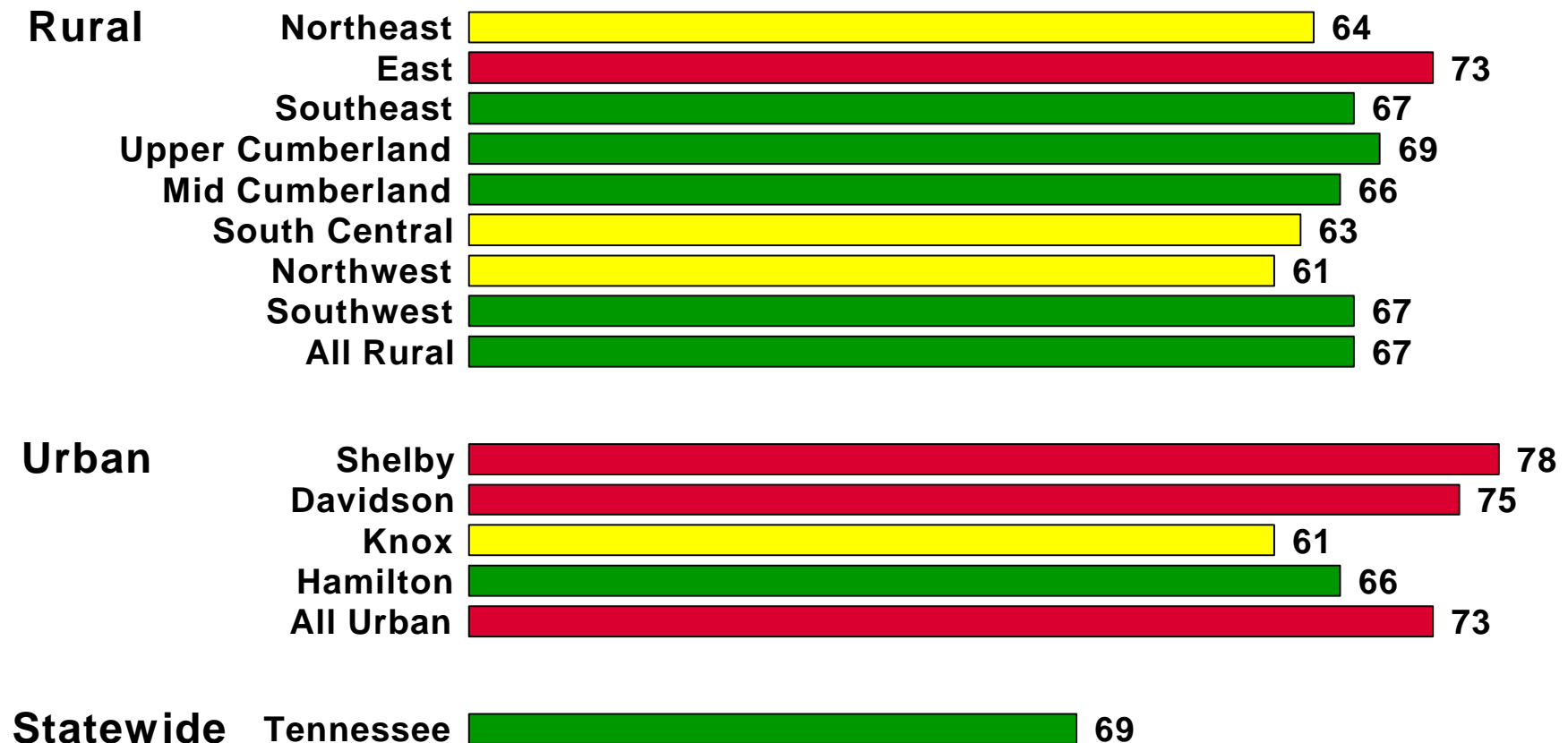
- TennCare enrollment rates, defined as the number enrolled in TennCare per 100 population in 1997, ranged from a low of 7.4% in Williamson County to a high of 47% in Scott and Fentress Counties. Statewide, 23% of the population was enrolled in TennCare, with approximately the same enrollment for both metropolitan (22%) and nonmetropolitan regions (23%). The highest TennCare enrollment rates were in Southwest Tennessee (27%); the lowest were in Mid-Cumberland (15%). In metropolitan regions, Shelby had the highest (27%) and Knox the lowest (18%) enrollment rates.
- Tennessee had an average TennCare primary care provider to population ratio of 1:674 with a ratio of 1:365 for metropolitan regions and 1:1,419 for rural regions as of February 1998.
- Grainger County had the highest population per TennCare provider at 4,622,³⁰ followed by Morgan (3,964), Henderson (3,346) and Giles (3,240). The most favorable or lowest population to TennCare provider ratios were in the four metropolitan counties topped by Davidson at 257, followed by Knox at 291, Hamilton at 355 and Shelby at 508.
- As of December 1997, the two MCO's with the largest share of TennCare eligibles were Blue Care (35%) and Access Med Plus (24%). No other MCO had more than a 9% share.³¹
- TennCare eligibles consisted of 3 main categories -- infants and children under 14 (32%), adults 14-44 (32%), and the blind and disabled (14%). Seven percent were ages 45-64; and 1% was 65 and over. Another 14% were dual eligibles enrolled in both Medicare and Medicaid.
- Among TennCare enrollees, as of December, 1997, 31% were uninsured/uninsurable and 69% were enrolled through Medicaid.
- Medicaid enrollees in TennCare as of December 1997 were much more likely to be children aged 1-13, Medicaid/Medicare recipients with dual coverage or blind or otherwise disabled persons. Uninsured/uninsurable TennCare enrollees were much more likely to be males aged 14-44 and adults of both sexes aged 45-64.

Source: Health Access Plan Update, 1998: The Blue Book. TDH, July, 1998. Bureau of TennCare, TDH, July 1998.

³⁰Moore County had a population to TennCare provider ratio of 9,510. However, this county was part of a larger Rural Health Service Area, which has a lower ratio.

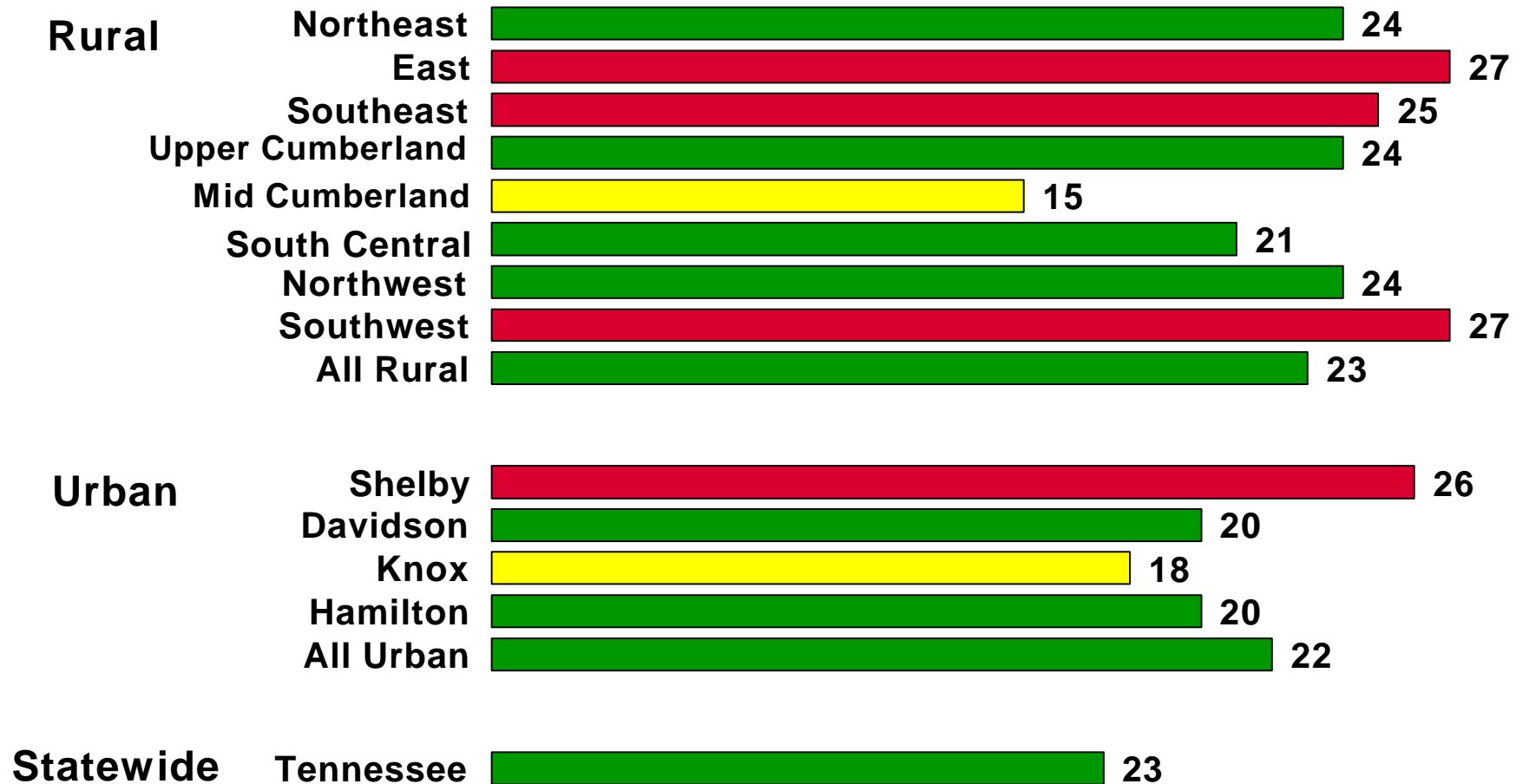
³¹Around December, 1997, the merger of Phoenix and HealthNet put the combined total at 13%.

TennCare Penetration or Coverage Rates (per TennCare Enrollees Relative to Persons Below 200% of Poverty in 1989), Tennessee, as of 2/98



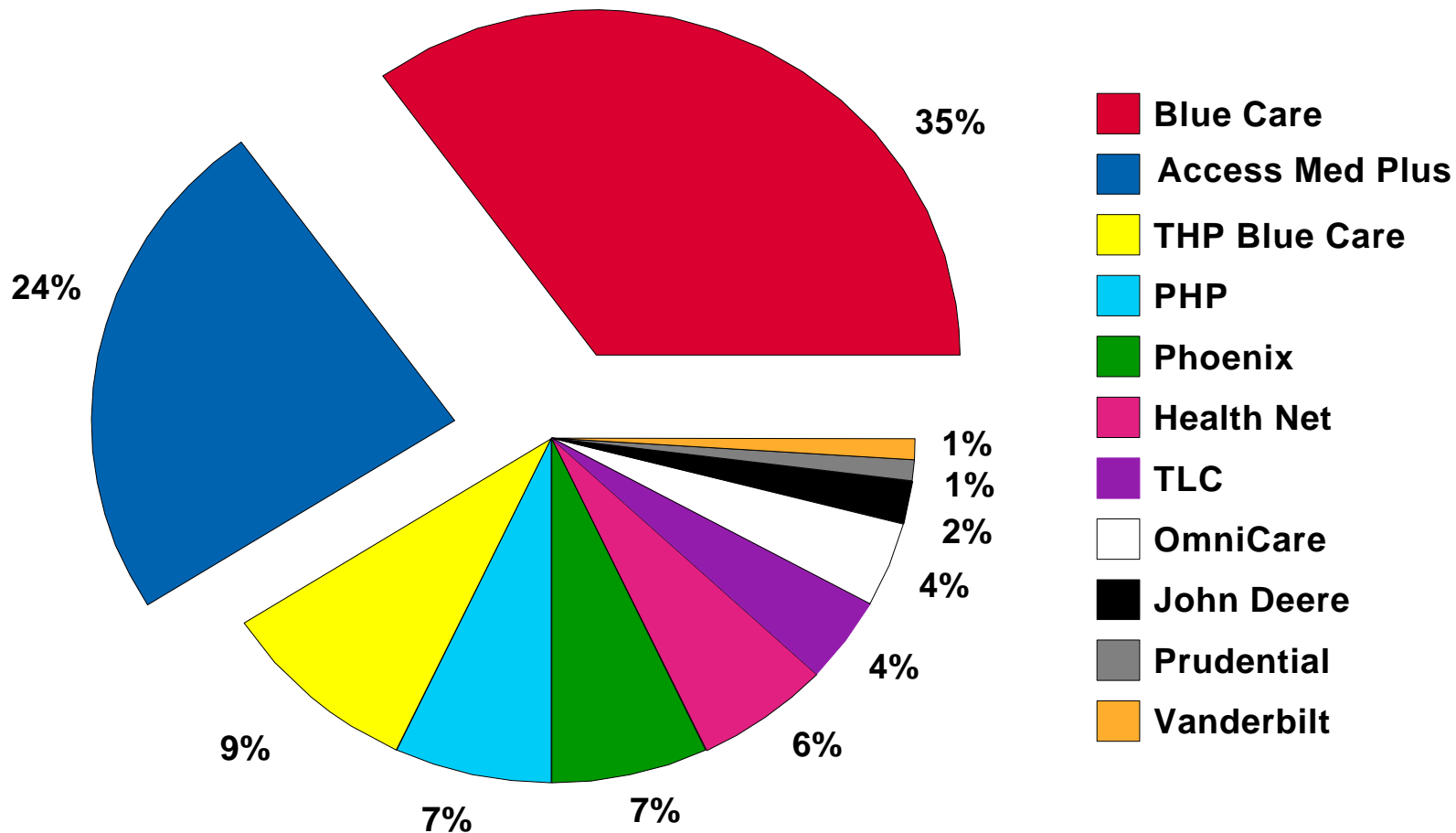
Source: Health Access Plan Update, 1998.
TDH, Bureau of Health Services, July 1998.

TennCare Enrollment Rates (per 100,000 Population) by Region, Tennessee, as of 2/98



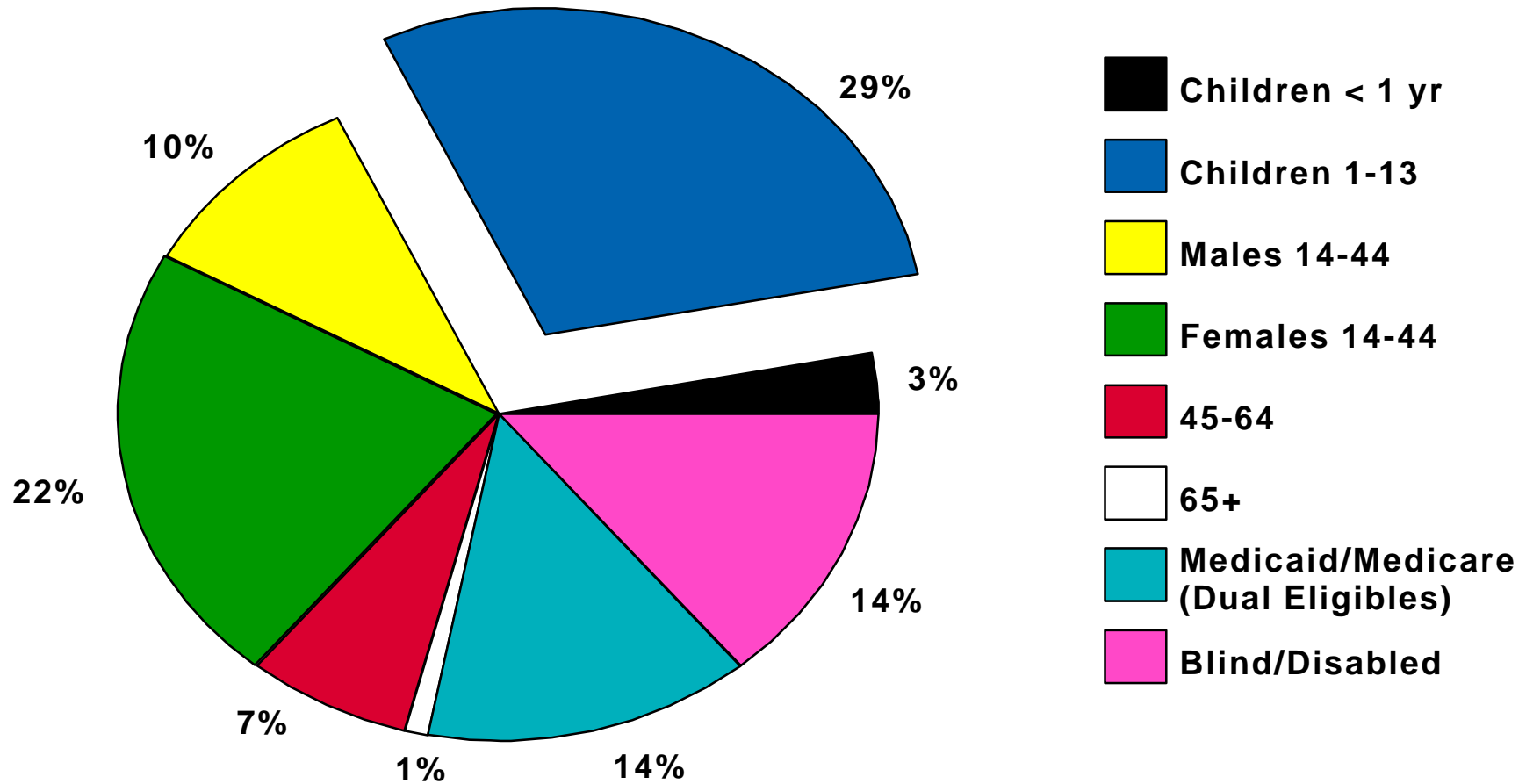
Source: Health Access Plan Update, 1998.
TDH, Bureau of Health Services, July, 1998

Percentage Share of TennCare Eligibles among Managed Care Organizations (MCOs), Tennessee, as of 12/30/97



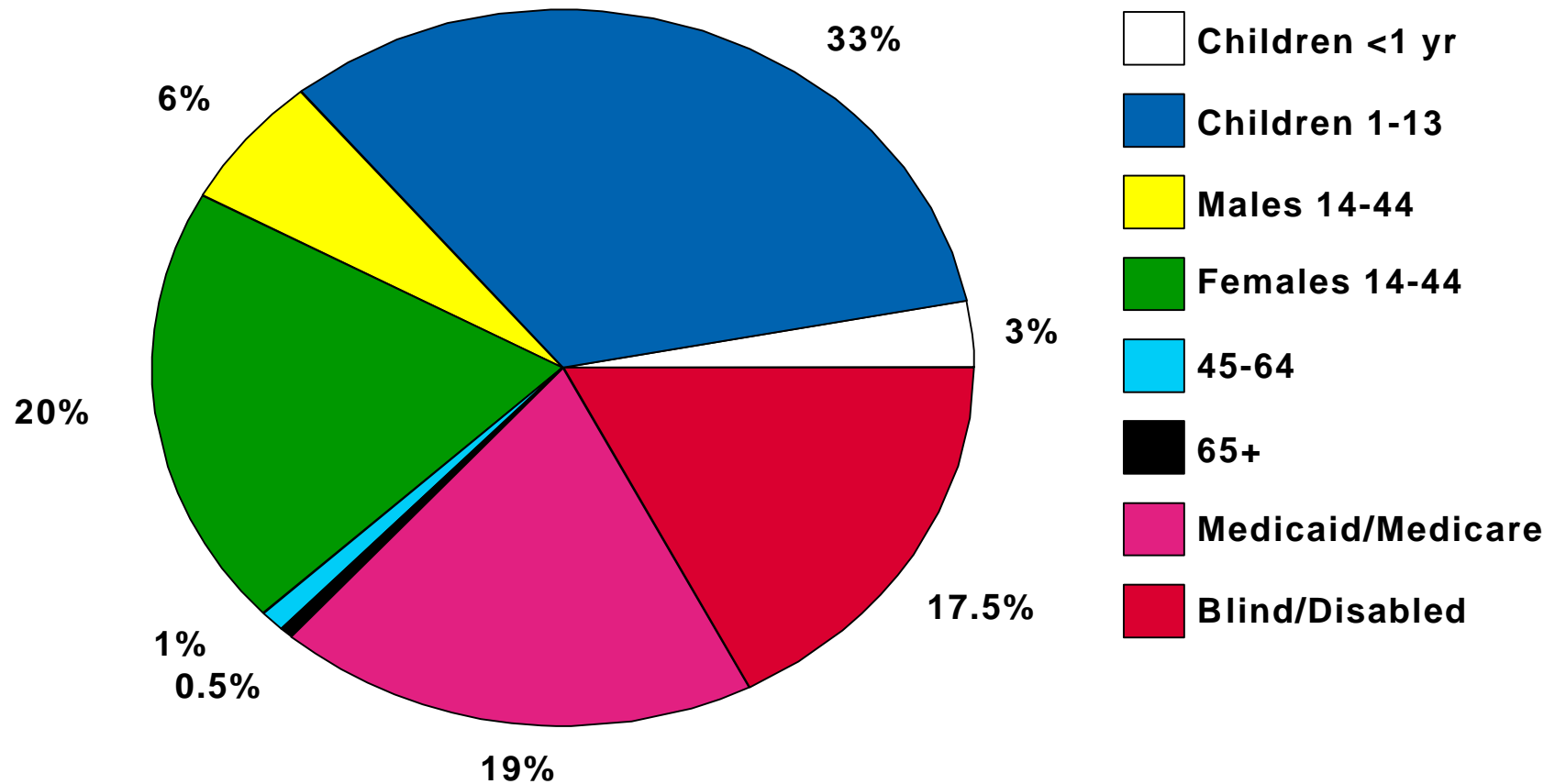
Source: Bureau of TennCare
TDH, December 30, 1997

Percentage Share of TennCare Eligibles among Categories of Enrollees, Tennessee, as of 12/30/97



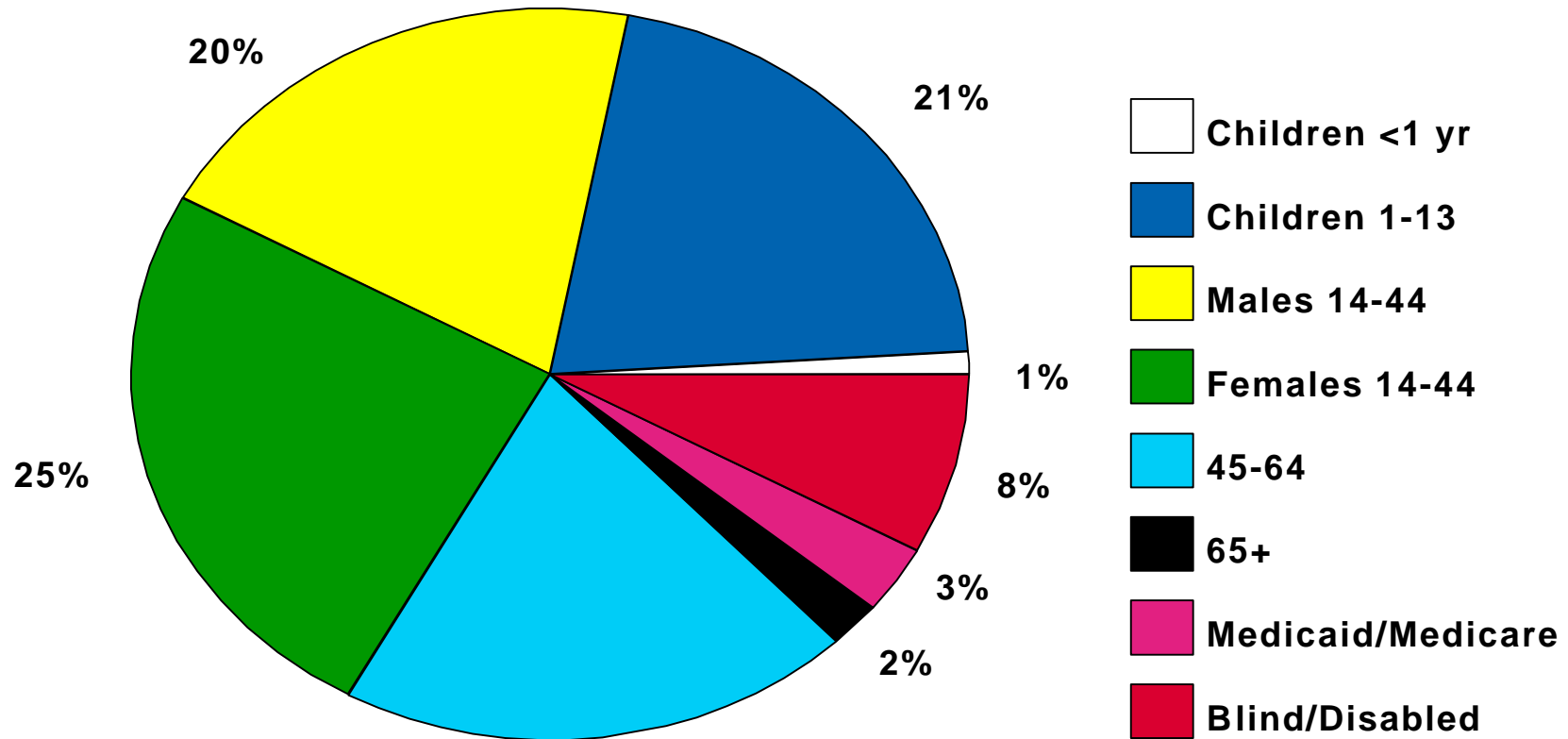
Source: Bureau of TennCare
TDH, December 30, 1997

Percentage Share of TennCare Eligibles among Medicaid Enrollees, Tennessee as of 12/30/97



Source: Bureau of TennCare
TDH, December 30, 1997

Percentage Share of TennCare Eligibles among Uninsured Enrollees, Tennessee as of 12/30/97



Source: Bureau of TennCare
TDH, December 30, 1997

HEALTH FACILITIES, 1996

Hospitals, Tennessee 1996³²

- The number of general/specialty hospitals in Tennessee has steadily declined overall since 1987. The apparent increase in numbers of such hospitals in 1996 to 133 from 124 in 1995 is an artifact of changes in reporting.³³ The number of hospitals in Tennessee in 1996 actually remained the same as in 1995.
- The number of hospital beds, both licensed and staffed (19,049), continued to show a decline in 1996 though at a slower rate than that which occurred from 1991 to 1995.
- The number of staffed beds per 1,000 population in 1996 was 3.6, about the same as in 1995 (3.7). Recent years have seen the continuation of a downward trend that started at 4.5 in 1991.
- All reporting facilities were Medicaid/TennCare-certified.

Utilization - Inpatient Care

- From 1995 to 1996, inpatient days decreased from 3.963 million to 3.858 million; admissions declined from 745,925 to 743,840; and average daily census fell from 10,857 to 10,570.
- Utilization of short-term hospital care in Tennessee continued its decline in 1996. However, both the average daily census and average length of stay fell compared to the last four years, with fewer patients and shorter average stays.
- Overall, the average length of stay in Tennessee hospitals declined by 17% from 6.3 days in 1991 to 6.1 in 1993, 5.3 in 1995, and 5.2 days in 1996.
- The average daily census also declined from 13,350 in 1991 to 12,342 in 1993, 10,857 in 1995, and 10,570 in 1996. This decline amounted to 21% over the period.
- Occupancy rates for both licensed and staffed beds remained fairly stable from 1995-1996 for licensed beds (43%) and staffed beds (55% to 56%). From 1991 to 1995, this rate had fallen from 50% to 43% for licensed beds and from 60% to 55% for staffed beds. The occupancy rate is defined as the ratio of inpatient days to bed days open during the year expressed as a percentage. The decline in

³²Hospitals include only short-term, non-Federal, general/specialty acute care hospitals.

³³Beginning in 1996, Tennessee hospitals were required to file a separate survey report on each individual hospital, even if it was a satellite hospital. Previously, hospital systems containing more than one hospital could submit a single report for the whole system.

occupancy rates follows a national trend for non-federal, short-term hospitals that began in the 1980's.

- In 1996, 77% of licensed beds were being staffed in Tennessee hospitals.

Costs³⁴

- While average length of stay and average daily census have been declining from 1991 to 1996, total operating costs for hospitals and cost per patient day have been increasing.
 - From 1991 to 1996, total operating costs for hospitals in Tennessee increased approximately 27%. Total operating costs³⁵ rose from \$4.5 billion in 1990 and \$4.9 billion in 1991 to \$5.8 billion and \$5.9 billion in 1993 and 1995, respectively. In 1996, these costs had reached \$62 billion. This represented a 27% increase over the period and a 5% increase in one year from 1995 to 1996.
 - Costs per adjusted patient day also increased from \$709 in 1990 and \$786 in 1991 to \$1,096 in 1996. This represents an overall 55% increase.
 - Total net revenue increased from \$4.76 billion to \$6.55 billion from 1990 to 1996.
- Tennessee hospitals are deriving a larger share of their income from outpatient services. In 1995, 30% of net patient revenue came from outpatient services compared to 33% in 1996.
 - Gross patient charges increased by 9.8% from 1995 (\$9.85 billion) to 1996 (\$10.82 billion).
 - Contractual adjustments to gross charges increased by 12.4% from \$4.17 billion to \$4.69 billion.
 - Net patient revenue (gross patient charges minus contractual adjustments) increased by 7.9% from \$5.68 billion to \$6.13 billion.

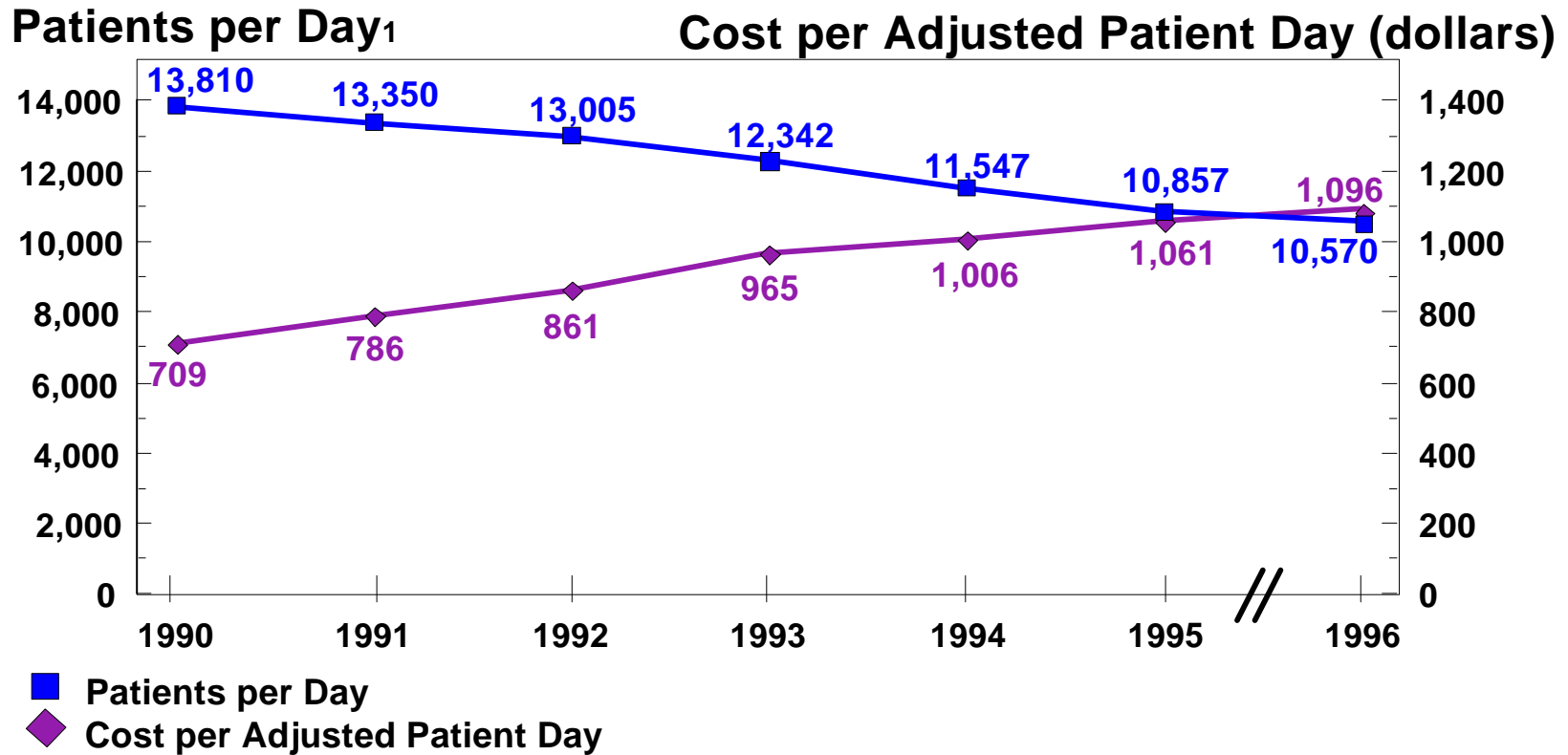
³⁴In 1996, 130 out of 133 hospitals reported complete financial data compared to 118 of 124 hospitals in 1995.

³⁵Dollar amounts have not been adjusted for inflation.

- Gross charges per adjusted patient day increased from \$1,816 in 1995 to \$1,940 in 1996, a 6.8% increase. Net patient revenue per adjusted patient day increased by 5% from \$1,047 in 1995 to \$1,099 in 1996.
- Net inpatient revenue per hospital admission rose from \$5,086 per admission in 1995 to \$5,274 in 1996, a 3.7% rise (108/124 hospitals reported in 1995 and 116/133 in 1996).
- In summary, inpatient cost per patient and inpatient revenue per patient increased by 4%-5% in 1996 over 1990.
- The percent of charges provided as charity care--that for which the hospital usually does not expect payment--increased by 9% from 1991 to 1996. At 2.3% in 1991, this percentage had fallen 37% from 1993 (2.7%) to 1995 (1.7%). From 1995 to 1996, it rose to 2.1% of hospital charges.

Sources: **Tennessee Hospital Data, March 1998**, Health Statistics and Information, TDH. **Tennessee Health Status Report 1997**, CHRG-TDH. Tabulations of Hospital Data 1996, TDH, Health Statistics and Information. Thanks to George Plumlee, Health Statistics and Information, TDH for vital assistance.

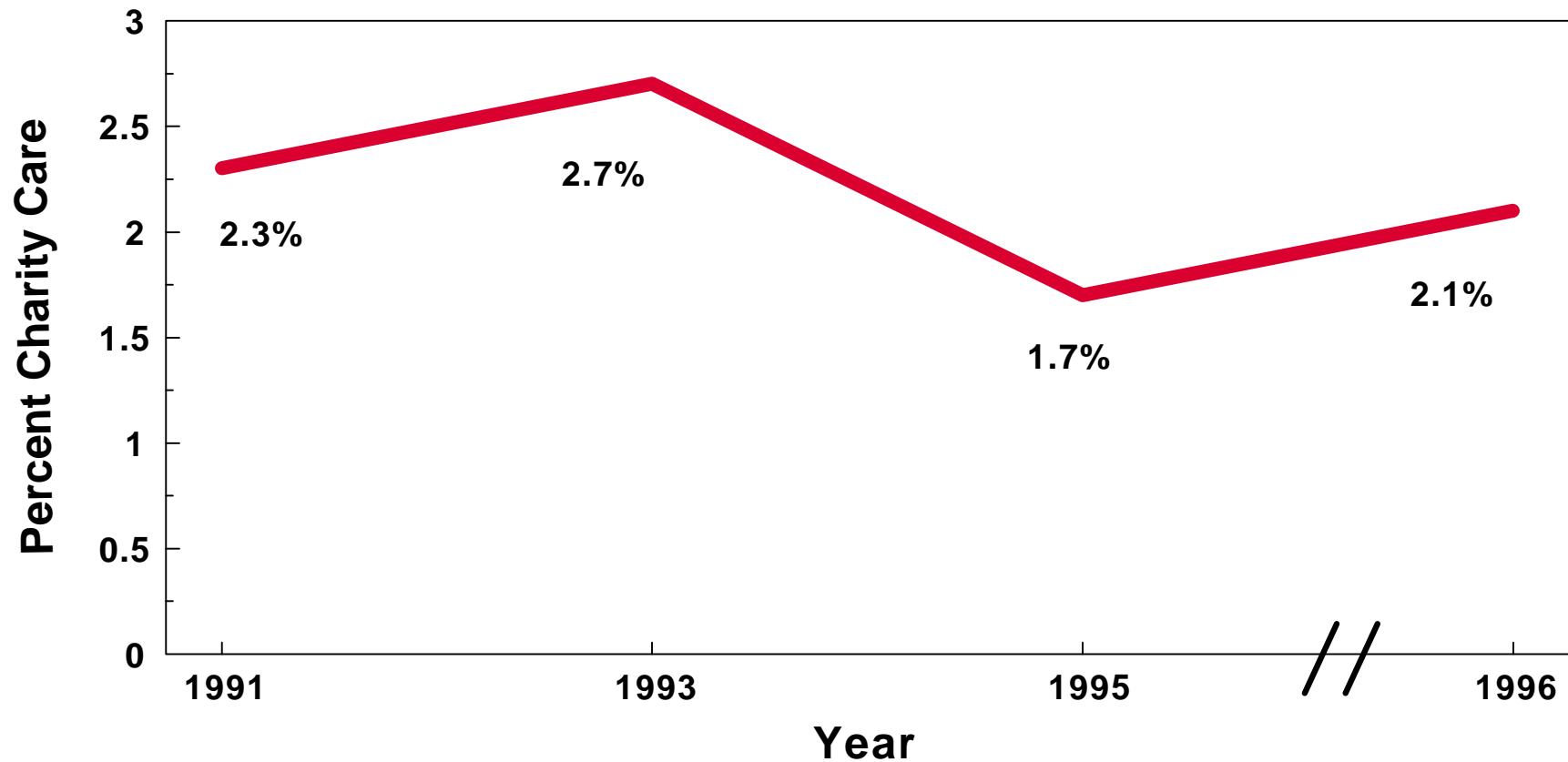
Average Daily Census¹ and Cost per Adjusted Patient Day in Tennessee Hospitals, 1991, 1993, 1995 and 1996



¹The Average number of patients in a facility on any day of the reporting calendar year.

Source: Tennessee Department of Health, Health Statistics and Information
Health Access Update, 1994, 1995, and 1996

Charity Care as a Percent of Hospital Charges Tennessee, 1991, 1993, 1995, 1996



Source: Tennessee Department of Health,
Health Statistics and Information
Health Access Update, 1994, 1995, and 1996

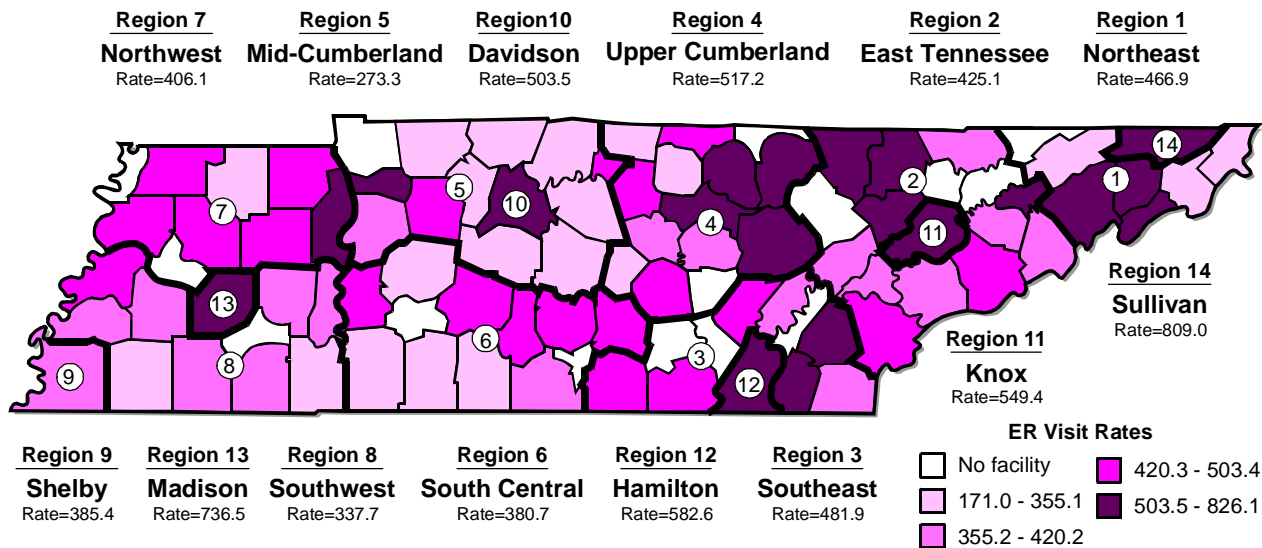
Utilization - Emergency Care

- In 1996, emergency room visit rates in short-term, non-federal hospitals ranged from a low of 171 visits per 1,000 population in Hickman County to a high of 826 visits in Fentress County. Five of the six metropolitan regions (Davidson, Knox, Hamilton, Madison, and Sullivan) and one nonmetropolitan region (Upper Cumberland) had rates in the top 25 percent, indicating rates of at least 503 visits per 1,000 population. As with 1995,³⁶ Shelby was the lowest ranking metropolitan region with 385 visits per 1,000 population. As in 1995, there was relatively heavy usage of ERs in the Eastern part of the State in addition to portions of the Upper Cumberland Region. Of the 15 counties lacking ERs (a decrease from 17 in 1995 due to the addition of new hospitals), most were located adjacent to counties with high ER utilization rates, suggesting cross-county service utilization.
- The statewide ER visit rate decreased in 1996 from 475.6 visits per 100,000 in 1995 to 440.9 in 1996. With the exception of Hamilton County, all metropolitan regions had lower ER rates in 1996.

Source: Joint Annual Report of Hospitals, 1995 and 1996, TDH, Health Statistics and Information. Thanks to George Plumlee, M.S., M.B.A., Health Statistics and Information, TDH.

³⁶It should be noted that exact comparisons to earlier reports are not possible due to the use of revised population estimates prepared by the U.S. Census Bureau. Whenever possible, 1995 and earlier rates have been re-calculated based on these revised estimates.

EMERGENCY ROOM VISIT RATES PER 1,000 POPULATION BY COUNTY AND REGION, TENNESSEE, 1996



Source: Tennessee Department of Health, Health Statistics and Information
Note: Emergency room visits in short-term nonfederal hospitals.

Statewide Rate = 440.9

Nursing Homes, Tennessee, 1996

Resources - Facilities

- The number of licensed nursing homes in Tennessee in 1996 was 347. This represented a 3% increase (11 nursing homes) since 1995 and a 15% increase (45 nursing homes) since 1990.
- The number of non-profit nursing homes increased 41.4% from 58 to 82 in the period from 1990 to 1996, while there was an 8.8% increase in for-profit nursing homes from 215 to 234 in the same period. The number of government nursing homes remained fairly constant at 29 in 1990 and 31 in 1996.
- The number of nursing home beds, both licensed and staffed, showed increases in 1996 compared to 1995. The number of licensed beds was 37,959 in 1995 and 38,786 in 1996. There were 37,796 staffed beds in 1995 compared to 38,516 in 1996. From 1990 to 1996, both licensed beds in nursing homes and staffed beds increased by about 11%.
- Eighty-six percent of all licensed beds in nursing homes in the State were Medicaid/TennCare-certified in 1996.
- Both the number of licensed beds per 1,000 population aged 65 and over and the number of staffed beds per 1,000 population aged 65 and over showed small decreases from 1995 to 1996. For 1996 each reported 56 beds per 1,000 population aged 65 and over. This was down from 59 for licensed beds in 1995 and 58 for staffed beds in 1995, but was the same number for each reported in 1991.
- In 1996, 42% of nursing home patients in Tennessee were 85 years of age or older, while 36% were aged 75-84. Fourteen percent of patients were between 65 and 74 years of age, while 8% were under 65 years old.

Utilization

- The number of nursing home patients in 1996 was 35,532 compared to 34,632 in 1995.
- In 1996, 26% of the patients were male and 74% were female.
- Approximately 5% of the population aged 65 and over in Tennessee were in nursing homes in 1996. This proportion has remained relatively stable since 1990.
- Nursing home admissions were 51,109 in 1996, an increase of 73% from 1990 (29,488). Discharges increased by 84% from 27,400 in 1990 to 50,554 in 1996.

- The average daily census of nursing home patients in Tennessee in 1996 was 34,904 compared to 34,595 in 1995 and 31,797 in 1990. (Patient census data is reported for December 31 of each year.)
- Percent occupancy for Tennessee nursing home patients remained high over the period from 1990-1996, fluctuating between 92% and 95%. Both licensed and staffed occupancy rates³⁷ showed small decreases of around 3% from 1995 to 1996, for licensed beds from 92.9% to 91.7% and for staffed beds from 93.3% to 92.3%. In 1990, percent occupancy for licensed beds was 93.5%; for staffed beds, it was 94.1%.
- The average length of stay continued to decline in 1996 to 245 days compared to 277 in 1995. This was a drop of nearly 12% in one year.
- There was a slight increase in patient turnover from 1995 to 1996--1.20 to 1.33.³⁸ From 1990 to 1996, the percentage increase in patient turnover was 57%. Most of this increase occurred between 1993 and 1995. In 1990, the patient turnover rate was 0.85.
- In 1996, 42% of nursing home patients in Tennessee were 85 years of age or older, while 36% were aged 75-84. Fourteen percent of patients were between 65 and 74 years of age, and 8% were under 65 years old.
- **Summary:** From 1990 to 1996, the average daily nursing home census increased by 10% and the rate of patient turnover increased by 56%, while the average length of stay decreased by 33%.

Costs

- Total operating costs for all nursing home facilities in Tennessee in 1996 were 1.36 billion dollars.
- Average cost per patient day for the state was \$124 in 1996.

Source: **Joint Annual Report of Nursing Homes**, TDH, 1997. **Tennessee Nursing Home Trends, August 1998**, TDH, Health Statistics and Information. Thanks to George Plumlee, M.S., M.B.A., Health Statistics and Information TDH, for technical assistance.

³⁷Percent occupancy is defined as patient days of care as a percent of bed days open for either licensed or staffed beds.

³⁸Patient turnover is calculated as the number of admissions divided by the number of staffed beds. It is an indicator for the average number of patients who are admitted to each bed during the reporting period.

Mental Health Treatment in Regional Mental Health Institutes, Tennessee, 1997

- Five Regional Health Institutes (RMHIs)³⁹ were funded by the Department of Mental Health until July 1, 1996. After July 1, 1996, the main source of revenue for the RMHIs was through TennCare Partners reimbursement under contract with two Behavioral Health Organizations (BHO) that authorized services and the level of care for their consumers.
- The number of patients admitted⁴⁰ to the 5 RMHIs in Tennessee in 1997 was 6,359.
- Sixty-three percent of patients were admitted to the RMHIs for the first time in 1997 with 37% being readmitted patients.
- The age-groups of patients more frequently admitted to the RMHIs in 1997 included the prime working and childbearing ages --30-39 year-olds (28%), 21-29 year-olds (20%), and 40-49 year-olds (18%). Thirteen percent of those admitted to the RMHIs were between 13 to 17 years of age.
- The 6,359 patients admitted to the RMHIs in 1997 were fairly evenly distributed across the five facilities. MTMHI had the highest proportion of admissions at 26%, followed by MMHI at 21%, MBMHI at 20%, and LMHI at 17%. WMHI had the lowest percentage of admissions at 16% of the total.

³⁹The psychiatric hospitals which are owned and operated by the State of Tennessee are referred to as Regional Mental Health Institutes (RMHI's). They are as follows: Lakeshore Regional Mental Health Institute (LRMHI) in Knoxville serving the East and Upper East Tennessee Regions; Moccasin Bend Mental Health Institute (MBMHI) in Chattanooga serving Southeast Tennessee and the Upper Cumberland Plateau; Middle Tennessee Mental Health Institute (MTMHI) in Nashville serving the Middle Tennessee area; Western Mental Health Institute (WMHI) in Bolivar serving West Tennessee; and Memphis Mental Health Institute (MMHI) serving Shelby County and counties bordering Shelby.

⁴⁰Unduplicated admissions are equivalent to a count of persons admitted at least once to the RMHI in 1997.

Licensed Mental Health and Mental Retardation Facilities Tennessee, as of June 1998

- As of June 1998, 1,308 licensed facilities in Tennessee provided mental health and mental retardation services.
- Of these, approximately 52% were classified as mental retardation facilities, and the other 48% were classified as mental health facilities.
- Of these licensed facilities, 44% were located in the metropolitan regions of Tennessee. Shelby and Davidson Counties had the most facilities (n=165 and n=137, respectively), while Madison and Sullivan Counties had the fewest (n=28 and n=31, respectively).
- The nonmetropolitan regions with the most facilities were Mid-Cumberland (152) and East (135) Regions.
- The majority (approximately 82%) of licensed facilities fell into the following categories:
 - mental health outpatient facilities (20%),
 - mental health supportive living services facilities (16%),
 - mental retardation residential habilitation facilities (16%),
 - mental retardation adult habilitation day facilities (11%),
 - mental retardation institutional habilitation facilities (7%),
 - mental health day program facilities (6%), and
 - mental retardation supported living facilities (6%).
- Three types of licensed mental health and mental retardation facilities were devoted solely to the needs of children: mental retardation preschool facilities, mental health therapeutic nursery facilities, and mental health intensive day treatment programs for children and adolescents. They comprised a total of 55, 5, and 46 facilities, respectively.

Note: Two mental health supportive living facilities (one in Davidson County and one in Maury County) were not included here due to admission suspensions. Another mental health supportive living facility in Davidson County was not included as it is awaiting codes approval before being issued a 1998 license.

Source: Tennessee Department of Mental Health and Retardation, Division of Licensure, June 1998.

HEALTH MANPOWER, TENNESSEE, 1998

FTE Primary Care Providers, 1998

- In 1998, a reported 4,609 full-time equivalent (FTE) primary care physicians were actively practicing in Tennessee. Of these, 70% were practicing in the four largest metropolitan counties of Davidson, Knox, Hamilton and Shelby. Mid-level providers - nurse practitioners, nurse midwives and physician assistants - added another 830 FTE primary care providers in 1998, 76% of whom were located in the 4 largest counties.
- The FTE primary care provider-to-population ratio indicates potentially underserved areas. Provider shortage areas are designated by the TDH to include counties or groups of counties that display the worst 30 ratios of providers to total population. The statewide ratio was 1:997 in 1998.
- In 1998, the provider-to-population ratio was nearly four times larger (i.e. less favorable) in nonmetropolitan Tennessee than in metropolitan areas--1:2,110 compared to 1:544.
- The lowest ratio (indicating a non-shortage area) was 411 persons per FTE primary care provider in Davidson County. The highest ratio (indicating a shortage area) was 1:6,281 in Grainger County, making it the most underserved county in the State. Of the metropolitan counties, Sullivan County had the highest ratio--1:1,176. The cutoff point for primary care shortage areas was 1:2,654 and above.
- One county, Moore, reported no FTE primary care physicians and 0.5 FTE primary care providers in 1998.

Physician Services

- The most FTE primary care physicians were located in two metropolitan counties -- Shelby County and Davidson County in 1998. Mid-Cumberland and Northeast Tennessee had the most primary care physicians among nonmetropolitan regions.
- Primary care physician-to-population ratios were lowest in Davidson and Knox Counties, on the one hand, and highest in Northeast Tennessee, on the other hand.

Numbers of Primary Care Providers by Category, Tennessee, as of July, 1998			
Regions	1998 FTE Mid-Level Primary Care Providers	1998 FTE Primary Care MDs	Physician : Population 1:X
Nonmetropolitan			
Northwest	14.9	110.3	1:2,264
Southwest	18.4	134.0	1:2,450
Mid-Cumberland	28.8	282.2	1:2,747
South Central	16.4	133.0	1:2,492
Upper Cumberland	21.1	146.0	1:2,498
Southeast	11.5	123.5	1:2,264
East Tennessee	56.3	227.3	1:2,762
Northeast	30.7	258.5	1:1,777
Metropolitan			
Davidson	272	1,054	1:517
Hamilton	52	445	1:676
Knox	126	568	1:654
Shelby	185	1,163	1:760
Statewide	830	4,609	1:997

Source: **Health Status Plan Update, 1998**, TDH.

Obstetric Services

- At the start of 1998, 686 FTE obstetric (OB) care providers were practicing in Tennessee. Nearly all were FTE OB physicians (n=669); 529 of these or 79% were practicing in the four largest metropolitan counties of Davidson, Hamilton, Knox, and Shelby. An additional 31 FTE mid-level providers offered OB care, with about 60% practicing in the four largest counties.
- In 1998, 55 counties reported either no OB providers or less than one FTE provider. Seven counties reported 10 or more OB providers, of which four were the largest counties. Thirteen counties in Tennessee reported no OB providers in 1997 compared to seventeen counties in 1996.
- Shelby County had the largest number of OB providers in both 1996 and 1997--186 and 163 respectively. In 1998, Shelby County had 265 FTE OB providers or 39% of the statewide total, compared to 23% of recorded births from 1994 to 1996.
- To identify areas in Tennessee that potentially have inadequate provision of obstetric services, the ratio of providers to female population ages 15-44 years is used. Of 37 rational service areas (RSA's) for OB care, 13 were designated health

resource shortage areas for OB, creating 31 counties that were underserved for OB care in 1998. Each of these counties had a ratio of providers to relevant population of 1:5,032 or greater. The statewide ratio of obstetric providers to population was 1:1,662 in 1998 compared to 1:1,809 in 1997. The statewide ratio of obstetric care providers to females aged 15-44 was 1:1,737 in 1998, compared to 1:1,897 in 1997, and 1:1,729 in 1996.

Pediatric Services

- In 1998, 1,009 FTE general pediatric physicians provided direct patient pediatric primary care in the State. Over two-thirds of these (n=689) were practicing in the four largest metropolitan counties of Davidson, Knox, Hamilton, and Shelby.
- Nearly one-third of these physicians were located in the 91 nonmetropolitan Tennessee counties, compared to 60% of the pediatric population (0-17 years of age).
- A total of 183 pediatric mid-levels (nurse practitioners and physician assistants) were actively practicing in Tennessee in 1998, with over 80% practicing in the four largest counties.
- The statewide pediatric physician-to-population ratio in 1998 was 1:1,356. The ratio in nonmetropolitan areas (1:2,569) was over three times that in metropolitan areas (1:792) in 1998. The ratio of pediatric providers to population was 1:148, or 1:2,310 in nonmetropolitan areas and 1:653 in metropolitan areas.

TennCare Primary Care Providers⁴¹

- As of July 1998, 1,607 FTE TennCare primary care physicians were actively practicing in Tennessee. Seventy-two percent were practicing in the four largest metropolitan counties where less than 40% of TennCare enrollees resided.
- A total of 186 FTE TennCare primary care mid-level providers were practicing in the State in 1998, with over 60% located in the 91 nonmetropolitan counties.
- The TennCare primary care provider-to-population ratio statewide was 1:674, with a four-fold difference between metropolitan counties' ratios (1:365) and nonmetropolitan counties' ratios (1:1,419).

⁴¹These are MDs and DOs with primary care specialties who contract with one or more managed care organizations to serve the TennCare population. Their numbers also include mid-level providers - nurse practitioners, nurse midwives, and physician assistants.

- In the four most populous counties, there were 274 primary care providers per 100,000 TennCare enrollees (1,268:462,930), whereas in the 91 nonmetropolitan counties, there were 70.4 providers per 100,000 enrollees (525:745,404).
- Of the 91 nonmetropolitan counties, the highest TennCare primary care provider-to-population ratios were observed for Grainger and Morgan Counties (1:4,622 and 1:3,964, respectively). The lowest ratios were noted for Davidson and Knox Counties at 1:257 and 1:291, respectively.

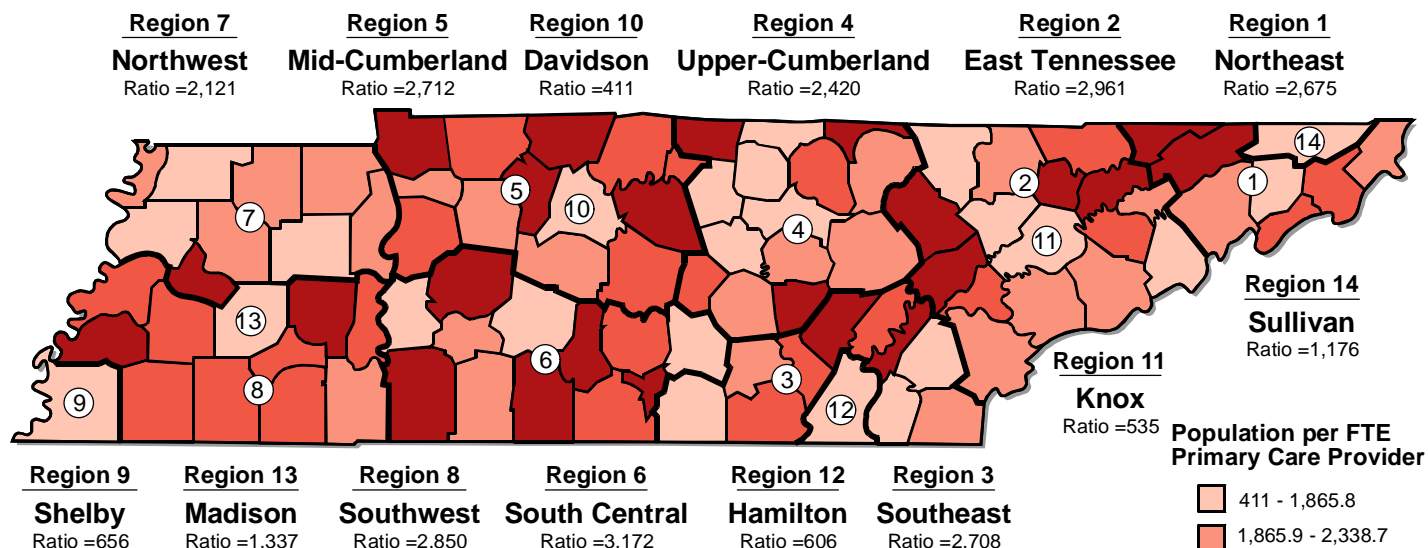
Health Resource Shortage Areas, as of July 1998

- Eighty-five Rational Service Areas (RSA's) each for primary care, general pediatric care, and TennCare primary care and 37 RSAs for OB care⁴² had been designated by the Tennessee Commissioner of Health as of mid-1998.
- Of the 85 RSA's for primary care, 29 or 34% had been designated as provider shortage areas. These shortage areas for primary care resources in Tennessee in 1998 included 30 counties with some clustering in East, Southeast and Northeast Tennessee and Northwest Tennessee (see map).
- Obstetrical (OB) service shortage areas, RSAs with inadequate or no OB services, represent 35% of the 37 RSAs in 1998. In 1996, 78% of counties were so designated. As of July 1998, the following counties were OB shortage areas: Fayette, Hardin, McNairy, Montgomery, Houston, Stewart, Perry, Lewis, Maury, Giles, Marshall, Hickman, Wayne, Lawrence, Robertson, Rutherford, Cannon, Bedford, Moore, Coffee, Franklin, Jackson, Putnam, White, Warren, Grundy, VanBuren, Monroe, Loudon, Blount and Cocke.
- Twenty-nine of 85 (34%) Rational Service Areas for pediatrics (ages 0-17) were declared shortage areas including 32% of all counties.
- Resource shortage areas for TennCare primary care in 1998 included 28 of 85 (33%) RSA's representing 30 counties and distributed somewhat differently than for all primary care services, with greater clustering in East, Southeast, Upper Cumberland and Northeast Tennessee.

Source: **Health Access Plan Update, 1998: The Blue Book**. Tennessee Department of Health, Bureau of Health Services, Tennessee Department of Health, July 1998. Thanks to Ann Hogan, Statistical Analyst, Bureau of Health Services, for her assistance and contributions.

⁴²Rational Service Areas are individual counties or groups of counties that have displayed obvious service patterns for residents based on available data.

FTE PRIMARY CARE PROVIDER TO POPULATION RATIO BY COUNTY AND REGION, TENNESSEE, 1998

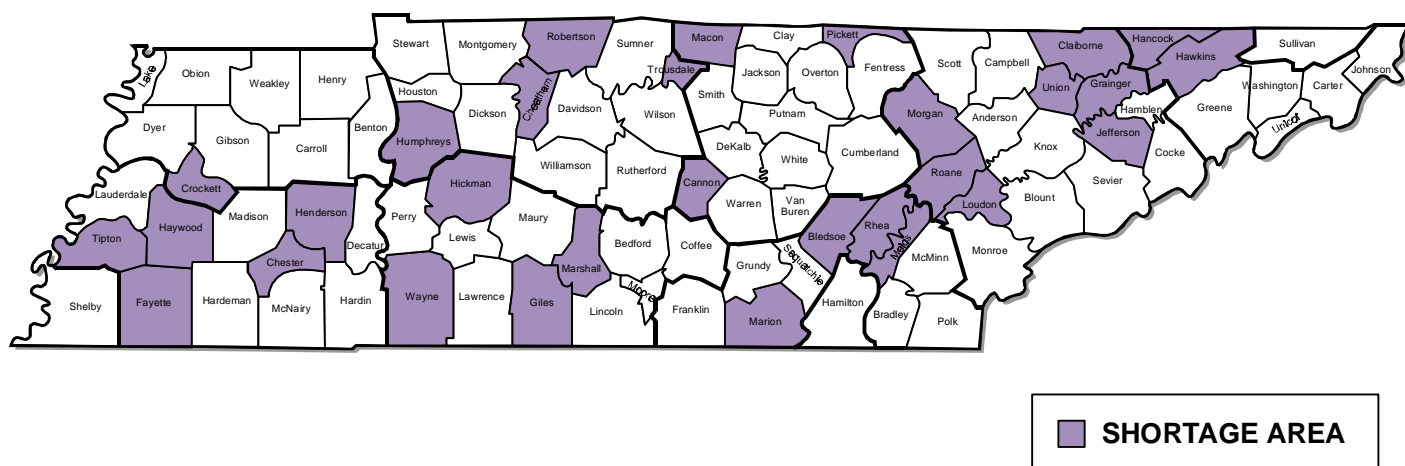


Source: Health Access Plan Update 1998, Tennessee Department of Health.

Note: Ratio obtained by dividing county population by number of full-time equivalent (FTE) primary care providers in the county.

Statewide Ratio = 997

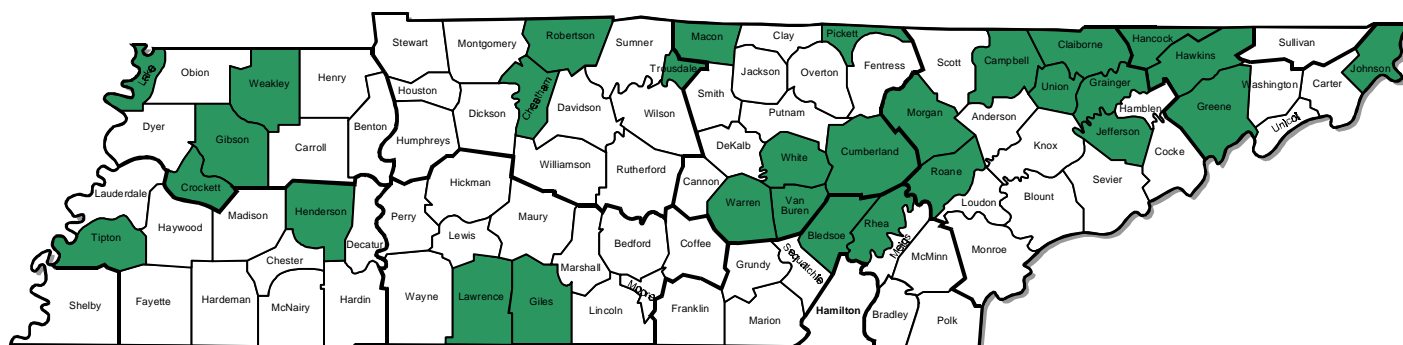
HEALTH RESOURCE SHORTAGE AREAS FOR PRIMARY CARE, TENNESSEE, AS OF JULY, 1998



Footnote: Primary care providers include MDs and DOs with the following specialties to family practice, general practice, internal medicine, OB-GYN, pediatrics, and general preventive medicine. Mid-level providers, nurse practitioners, nurse midwives and physician assistants are also included.

Source: Health Access Plan Update, 1998, Tennessee Department of Health.

HEALTH RESOURCE SHORTAGE AREAS FOR TENNCARE PRIMARY CARE, TENNESSEE, AS OF JULY 1998

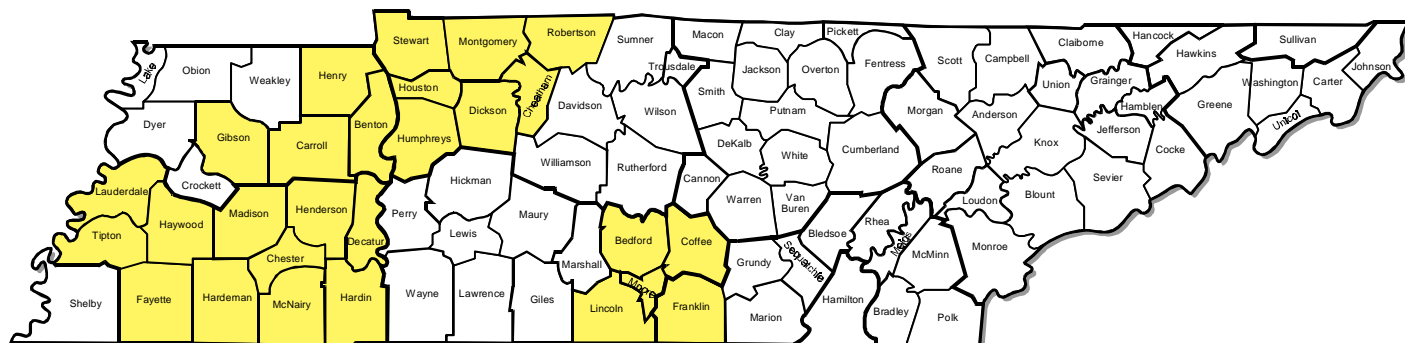


SHORTAGE AREA

Note: TennCare shortage areas are designated by the Tennessee Department of Health to include the counties that displayed the 30 highest ratios of TennCare population to TennCare primary care provider in the state. The range in ratios is 1,673 to 4,622 to designate shortage areas.

Source: Health Access Update, 1998, Tennessee Department of Health.

**FEDERAL HEALTH PROFESSIONAL SHORTAGE AREAS FOR MENTAL HEALTH,
MAY, 1998¹**



SHORTAGE AREA

¹Mental health professional shortage areas are federally-designated counties that meet or exceed standards of need for mental health providers. The provider-to-population thresholds that define shortage areas differ by type of mental health providers and educational level (the ratio for psychiatrists is 1:20,000).

Source: **Health Access Plan Update, 1998: The Blue Book.** Tennessee Department of Health, Bureau of Health Services, Tennessee Department of Health, July 1998.

OTHER FACILITIES AND MANPOWER DATA, COMPARING TENNESSEE AND THE U.S.

- The annual average percent increase in state mental health agency per capita expenditures from 1981-1993 was 6.3% in Tennessee on a par with the 6% increase nationally.
- Hospital care expenditures in Tennessee rose from \$2,027 million in 1980 to \$7,208 million in 1993. In the period 1980-1990, the annual average increase was 10.5%, whereas in 1990-1993, the increase had slowed slightly to 9.4%. In the U.S., the respective increases were 9.6% for the earlier period and 8.4% for the later period.
- Physician services expenditures in Tennessee also rose from \$841 million in 1980 to \$3,137 in 1993. In 1980-1990, the increase was 11.8%, slowing to 6.9% in 1990-1993 in Tennessee. Similar results were observed for the U.S., where the average annual increase of 12% in 1980-1990 slowed to 6.8% in 1990-1993.
- Expenditures for prescription drugs rose from \$288 million in 1980 to \$1,153 million in 1993 in Tennessee. The increase was 11.9% in 1980-1990 and 9.2% in 1990-1993. For the U.S., the increase in drug expenditures was 12.2% in the earlier period and 8.5% in 1990-1993.
- Nursing home occupancy rates in Tennessee fell from 92.6% of beds occupied in 1992 to 87.1% in 1995.
- Nursing home resident rates (all ages) also fell between 1992 and 1995 from 514.5 to 464.8 per 1,000 population aged 85 and over.
- Nursing home beds increased slightly during that period, from 35,417 to 37,611, as did numbers of nursing homes, from 302 in 1992 to 328 in 1995.
- Community hospital beds per 1,000 civilian population increased from 1.9 in 1940 to 4.3 in 1994. Increases were observed for 1940-60 (3%), 1960-70 (3.3%) and 1970-80 (1.6%). However, in 1980-1990, the average annual decline was 1.1% and 2.7% in 1990-1994. National trends suggest less change in the U.S. than in Tennessee in beds per 1,000 population, which increased from 3.2 in 1940 to 3.5 in 1994. Very slight increases were noted in the decades from 1940-1980 of 0.6% (1940-60), 1.8% (1960-70) and 0.5% (1970-80). Declines of 1.7% and 1.4% were observed for 1980-1990 and 1990-1994, respectively, for the U.S.
- Substance abuse clients in specialty treatment in Tennessee rose from 183.6 per day in 1992 to 243.6 per day in 1993.

- The major change has occurred in the proportion of clients with alcoholism only diagnoses. These increased from 67.1 per 100,000 population in 1992 to 103.6 per 100,000 in 1993. In the U.S., this group of clients has decreased from 160.1 to 149.3 per 100,000 from 1992-1993.
- In Tennessee, drug abuse client rates have also increased, from 51.8 per 100,000 in 1992 to 74.0 per 100,000 in 1993. Clients with both alcoholism and drug abuse have remained at about the same level, at 64.7-65.9 per 100,000, in Tennessee.

**State Mental Health Agency per Capita Expenditures for Mental Health Services,
Tennessee and the United States, Selected Fiscal Years, 1981-1993***

	1981	1983	1985	1987	1990	1993
TN	\$18	\$20	\$23	\$24	\$29	\$37
U.S.	\$27	\$31	\$35	\$38	\$48	\$54

*Excludes mental retardation and substance abuse service expenditures.

Source: Health United States, 1996-1997, p. 280.

**Health Care Expenditures in Tennessee in Millions of Dollars,
Selected Years, 1980-1993**

(In Millions)	1980	1985	1990	1991	1992	1993
Hospital Care Expenditures	\$2,027	\$3,483	\$5,511	\$6,146	\$6,761	\$7,208
Physician Service Expenditures	\$841	\$1,499	\$2,569	\$2,822	\$2,988	\$3,137
Expenditures for Purchases of Prescription Drugs	\$288	\$500	\$886	\$996	\$1,072	\$1,153

Source: Health United States, 1996-1997, pp. 277-279.

**Average Annual Percent Change in Selected Health Care Expenditures,
Tennessee and the United States, 1980-1993**

		1980-1990	1990-1993
Hospital Care Expenditures (in Millions)	TN	10.5	9.4
	U.S.	9.6	8.4
Physician Service Expenditures (in Millions)	TN	11.8	6.9
	U.S.	12.0	6.8
Expenditures for Prescription Drugs (in Millions)	TN	11.9	9.2
	U.S.	12.2	8.5

Source: Health United States, 1996-1997, pp. 277-279.

**Nursing Home Bed Occupancy Rates and Nursing Home Resident Rates in
Tennessee and the U.S., 1992 and 1995**

		1992	1995	Percent Change
Nursing Home Occupancy Rates (% of Beds Occupied)	TN	92.6	87.1	-5.9
	U.S.	86.0	81.1	-5.7
Nursing Home Resident Rates (Nursing Home Residents per 1,000 Resident Population 85 and over)	TN	514.5	464.8	-9.7
	U.S.	444.4	408.4	-8.1

Source: Health United States, 1996-1997, p.247-248.

**Nursing Home Bed Rates and Numbers of Beds in Tennessee and the U.S., 1976,
1986, and 1991.**

		1976	1986	1991
Nursing Home Bed Rates (Number of Beds per 1,000 Resident Population 85+ over)	TN	547.6	534.8	534.6
	U.S.	685.3	542.1	494.5
Number of Beds	TN	19,125	28,077	32,493
	U.S.	1,298,968	1,504,683	1,559,394

Source: Health United States, 1996-1997, p.247-248.

**Community Hospital Beds per 1,000 Civilian Population,
Tennessee and the U.S., 1940-1994**

	1940	1950	1960	1970	1980	1990	1994
TN	1.9	2.3	3.4	4.7	5.5	4.8	4.3
U.S.	3.2	3.3	3.6	4.3	4.5	3.7	3.5

Average Annual Percent Change in Above

	1940-1960	1960-1970	1970-1980	1980-1990	1990-1994
TN	3.0	3.3	1.6	-1.1	-2.7
U.S.	0.6	1.8	0.5	-1.7	-1.4

Source: Health United States, 1996-1997, p. 245.

**Active Non-Federal Physicians and Doctors of Medicine in Patient Care per
10,000 Civilian Population, Tennessee and the U.S., Selected Years, 1975-1995**

		1975	1985	1990	1995
Total Physicians per 10,000 Population (Includes active MD's and DO's)	TN	12.4	17.7	19.5	22.5
	U.S.	15.3	20.7	22.2	24.2
Doctors of Medicine in Patient Care per 10,000 Population (Does not include DO's)	TN	11.3	16.2	18.1	20.8
	U.S.	13.5	18.0	19.5	21.3

Source: Health United States, 1996-1997, p. 230.

Medicaid Payments per Recipient, Tennessee and the U.S., 1980-1995

Payments per Recipient			
	1980	1990	1995
TN	\$1,071	\$1,896	\$1,891
U.S.	\$1,079	\$2,568	\$3,311

Source: Health United States, 1996-1997.

**Medicaid Recipients per 100 Persons Below Poverty, Tennessee and the U.S.,
1989-1990 and 1994-1995.**

Recipients per 100 Persons Below the Poverty Level		
	1989-1990	1994-1995
TN	67	148
U.S.	75	96

Source: Health United States, 1996-1997.

**Medicare Enrollees, Payments per Enrollee and Short-Stay Hospital Utilization,
1990 and 1994**

	Payments per Enrollee		Discharges per 1,000 Enrollees		Average Length Of Stay in Days	
	1990	1994	1990	1994	1990	1994
TN	\$2,982	\$4,441	363	375	8.3	7.1
U.S.	\$3,012	\$4,375	316	345	8.8	7.5

Source: Health United States, 1996-1997, p. 281.

CHILDREN'S HEALTH STATUS AND HEALTH INITIATIVES IN TENNESSEE (KIDS COUNT AND TN KIDS)

Demographic Trends

- In 1996, children ages 0-13 made up 20% of Tennessee's total population.
- In 1996, of all children ages 0-13 in Tennessee, 22% were black, 77% were white, and 1% were of other races.
- The number of children in Tennessee increased by 11% between 1990 and 1996.
- The largest percentage increase in the number of children in Tennessee from 1990 to 1996 occurred among children of races other than white or black (18%). The number of black children in Tennessee increased by 14% from 1990 to 1996, while the number of white children in Tennessee increased by 10%.
- The overall number of children under age 18 in Tennessee is projected to increase by 6% between 1996 and 2005. The projected changes from 1996 to 2005 by age of child are as follows:
 - Numbers of children 0-5 years old will decrease by 1%;
 - Numbers of children 6-12 years old will increase by 8%; and
 - Numbers of children 13-17 years old will increase by 13%.

Source: Health Information Tennessee Web site, CHRG-TDH June 1998. **1998 Kids Count Data Book: State Profiles of Child Well-Being**, Annie E. Casey Foundation, Baltimore, MD, 1998.

Children's Health Status and Health Initiatives in Tennessee and Changes from 1985 to 1995

- Between 1985 and 1995, infant mortality rates and child death rates decreased in Tennessee, as well as in the United States. The United States had a greater decrease in infant mortality rates than did Tennessee. Tennessee, on the other hand, registered a greater decrease in child death rates than did the United States.
- Between 1985 and 1995, teenage birth rates, the percent of low birth-weight babies, and the rate of teenage deaths by accident, homicide, and suicide increased in both Tennessee and the United States. The increase in the teenage birth rate was higher for the United States (16%) than for Tennessee (8%), while the increase in the percent low birth-weight babies was greater in Tennessee (10%) than in the United States (7%).

- The increase in the rate of teenage injury deaths (by accident, homicide, and suicide) in Tennessee (34%) between 1985 and 1995 was substantially higher than the increase that occurred in the United States (3%) during the same period.
- The percent of children in poverty, the percent of teenagers not attending school and not working, and the percent of teenagers who left high school before graduating decreased in Tennessee. Tennessee experienced a greater decrease in each of these areas than the United States.
- The percent of families with children headed by a single parent increased by 27% in Tennessee between 1985 and 1995. This was a larger increase than occurred in the United States (18%).
- The juvenile crime arrest rate in Tennessee between 1985 and 1995 increased by 63%. This is only slightly lower than the increase that occurred in the United States (66%) in the same period.

Child Health Insurance, 1995

- Thirteen percent of all children under age 18 in 1995 did not have health insurance.
- Fourteen percent of children ages 0-5 did not have health insurance. Additionally, 13% of children ages 6-17 were uninsured.
- Seventeen percent of children under age 18 in poverty in 1995 did not have health insurance, as was the case for 22% of children under age 18 in low-income working families.

1995 Child-Care Indicators

- In 1995, 65% of Tennessee's children under age 6 lived with working parents. This was slightly higher than for the United States (63%).
- In 1995, 57% of children ages 6-12 in Tennessee lived with working parents, also slightly higher than the percent for the United States - 51%.
- The percent of children in Tennessee under age 13, living in low-income families, with working parents in 1995, was 26%. This was higher than the corresponding percent for the United States (21%).

Source: **Kids Count Data Book: State Profiles of Child Well-Being**. Annie E. Casey Foundation, Baltimore, MD, 1998.

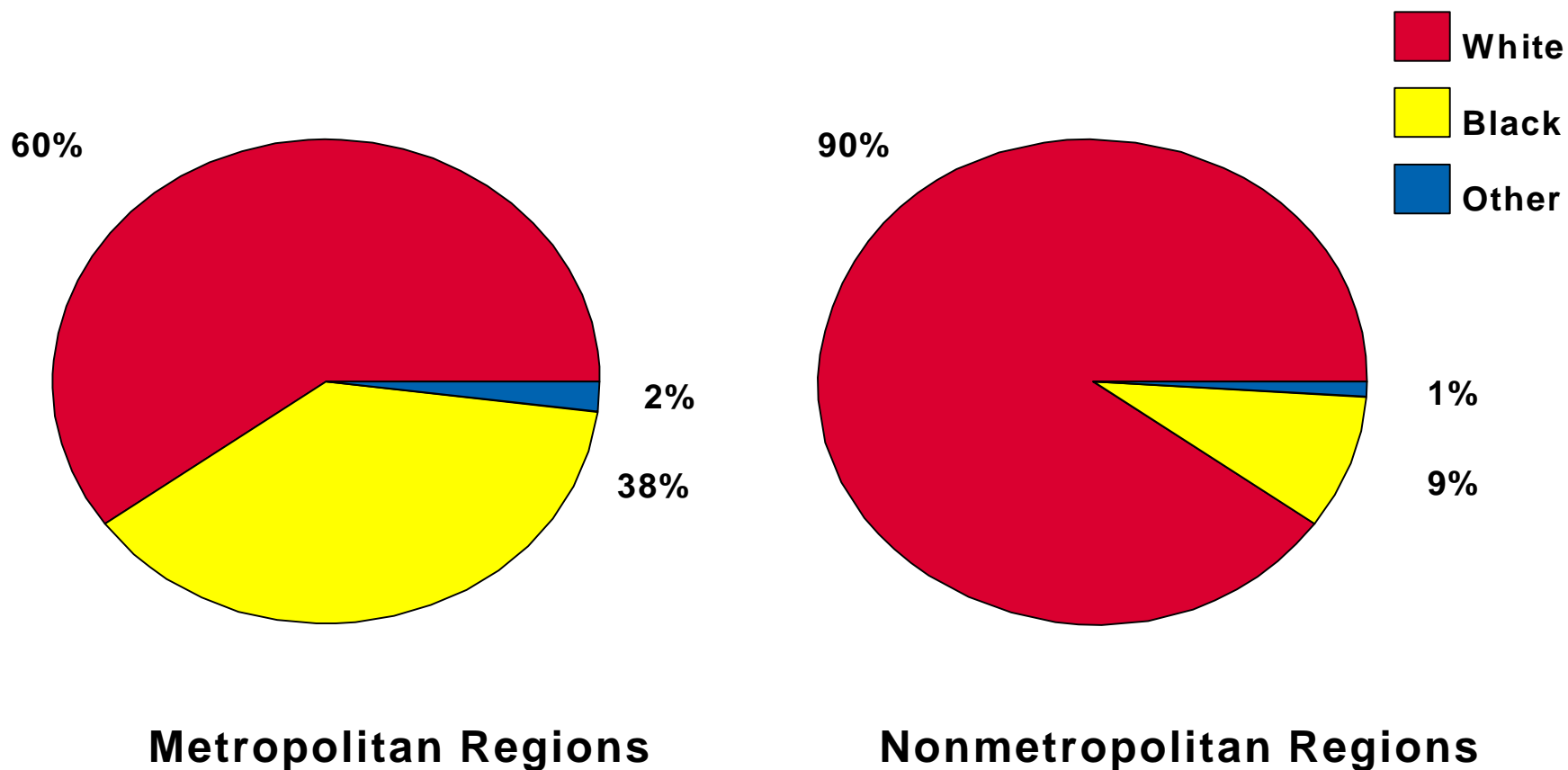
- The percent of families with children headed by a single parent is increasing in Tennessee. From 1985 to 1993, there was a 36% increase in the percent of children living with single parents. In 1985, 22% of families with children were headed by a single parent compared to 30% in 1993. Nationally, Tennessee ranked 47th in the percent of families with children headed by a single parent.
- Divorce was the leading cause for the increase in single-parent families in Tennessee. The State's divorce rate in 1995 was 6.8 per 1,000, which was 48% higher than the 1994 U.S. divorce rate of 4.6 per 1,000.
- For all races, the State's unwed birth rate increased 247% from 1962 to 1995. The percent of all births to unmarried women of all ages, which was 9.5% in 1962, rose to 33% in 1995.
- Between 1985 and 1993, there was a 10% decrease in the percent of children living in poverty in Tennessee. In 1985, the prevalence of childhood poverty was 27%, and in 1993, it was 24%.
- There was also a 6.6% decrease in the percent of children who received AFDC between 1992 (14.4%) and 1996 (13.5%). However, Tennessee's child poverty rate in 1993 of 24% was somewhat higher than the national average of 21%. Tennessee ranked 40th nationally on this indicator.
- The Tennessee Alcohol, Tobacco, and Other Drugs Survey, a 1995/1997 statewide survey of 102,000 high school students, revealed that 18.8% of the respondents said they had sex as a result of using alcohol or other drugs (Memphis students did not answer this question). The survey also reported that 11% of the respondents reported missing school or work due to alcohol or other drug use.
- Students revealed the average age for first AOD use was:
 - 13 years old for beer, wine, and inhalants; and
 - 14 years old for liquor, marijuana, cocaine, heroin, and hallucinogens.
- Other findings were: 68% of students drank alcoholic beverages; 62% smoked cigarettes; 43% were offered or given an illegal drug; 36% smoked marijuana; 9% used LSD; 8% used inhalants; and 6% used cocaine or crack.
- From school years 1982-83 to 1995-1996, there was a 3,450% increase in school expulsions for firearms and an increase of 1,943% in the number of school expulsions for possession of other weapons.

- The leading cause of school expulsions in the 1995-1996 school year was violence directed against students, teachers, or other school personnel. Expulsions for violent behavior increased 2,021% from school years 1982-83 to 1995-1996. In 1995-1996, 19.3% of the expulsions were due to violent behavior, the leading cause of expulsions. Illegal drug possession was the second leading cause of expulsion in 1996, with 15.5% of all expulsions attributed to drug possession. Expulsions for violence were most prevalent in two of the State's largest urban areas. Shelby County had the highest percentage of school expulsions (38%) followed by Davidson County (23%).
- Since 1994, the percent of the total population enrolled in TennCare decreased 6.2% from 24.2% in 1994 to 22.7% in 1996.
- Tennessee's prenatal care indicator improved 15.5% from 1990 to 1995. In 1990, 32.3% of all births lacked adequate prenatal care, while in 1995, 27.3% of births lacked adequate prenatal care, as determined by the Kessner Index.
- The percent of babies born at low-birth weight has increased 6.1% from 1990 to 1995. In 1990, 8.2% of the babies born (6,160 babies) weighed less than 5.5 pounds. Nationally, Tennessee ranked 47th worst on this indicator.
- Low-birth-weight babies are 40 times more likely to die during the first month of life than normal weight infants. Some factors common to low-weight births are known to be inadequate prenatal care; teenage pregnancy; poverty; and the use of tobacco, alcohol, and illegal drugs during pregnancy.
- The State's infant mortality rate has declined 9.7% from 1990 (770 infant deaths) to 1995 (677 deaths). In 1995, the rate was 9.3 per 1,000, compared to the rate of 10.3 per 1,000 in 1990.
- The prevalence of sexually transmitted diseases (STD) declined 10.9% from the 1991 rate of 2636.4 per 100,000 to the 1995 rate of 2348.9 per 100,000 teenagers.
- The teenage violent death rate increased 22% from 1990 to 1995. In 1990, the rate was 75 per 100,000, compared to 92 per 100,000 in 1995. The leading cause of teenage violent deaths was motor vehicle accidents. Firearm injuries were the second leading cause of teenage violent deaths in Tennessee.
- There was a 14% increase from 1991 to 1996 in the number of students in public schools who were receiving special education services. In school years 1990-1991, 16% of the student population received special education services, compared to 18% in school year 1995-1996.

- Tennessee's high school leaving or "dropout" rate declined 29% from 1990-1991 (6.3%) to 1994-1995 (4.5%). Nationally, Tennessee ranked 38th on this indicator as reported in 1996. The rate is calculated by dividing the number of dropouts within the year by the net student enrollment at the end of the school year.
- The rate of reported child abuse and neglect increased 16% from 1992 to 1995. In 1991-1992, the rate was 8.3 per 1,000, while in 1995 the rate was 9.6 per 1,000.
- The percent of the population receiving Food Stamps declined 10% from 1992 to 1996. In 1992, there were 681,581 Food Stamp recipients, compared to 631,104 recipients in 1996.
- From 1992 to 1996, the percent of students participating in the free- or reduced-price lunch program increased by 10%. In the 1991-1992 school year, 31% of the students participating in the School Lunch Program received lunch at free or reduced prices, compared to 34% in 1994-1995.

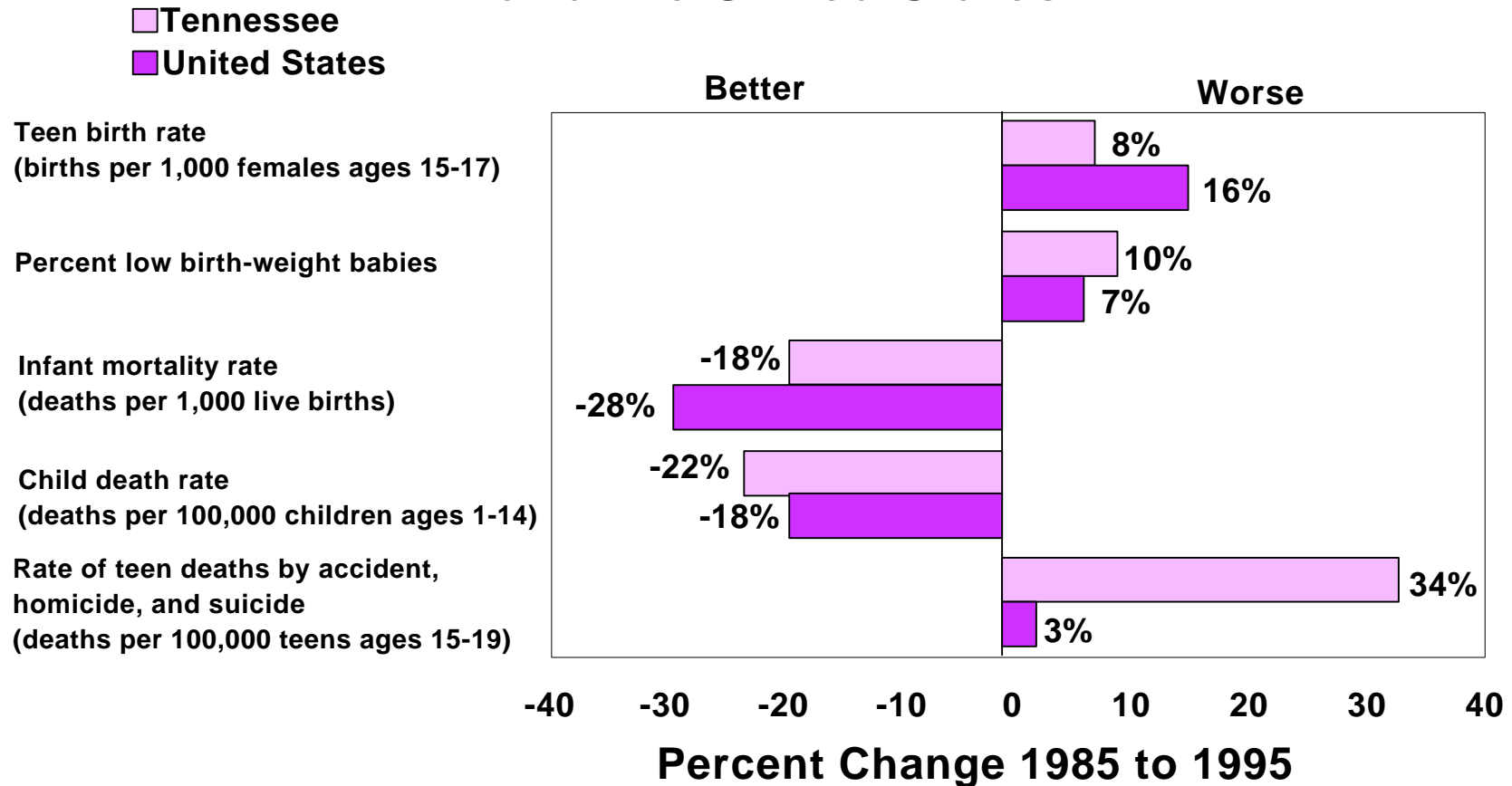
Source: **Kids Count: The State of the Child in Tennessee 1996**. Tennessee Commission on Children and Youth, Nashville, TN, 1997.

Percent of Children Ages 0-13 by Race and Metropolitan/Nonmetropolitan Residence, Tennessee, 1996



Source; Health Information Tennessee Web Site
TDH-CHRG, June 1998

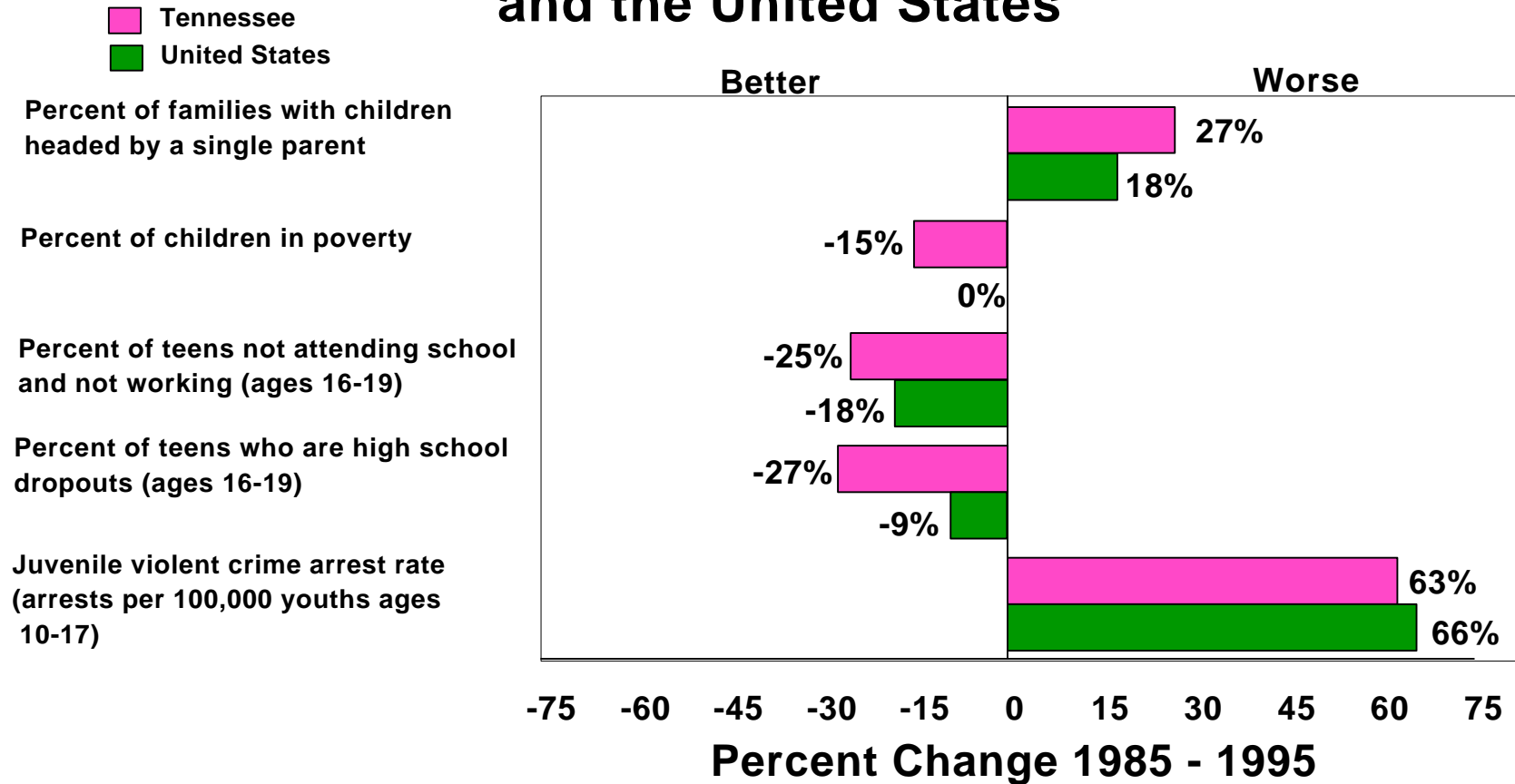
Health Indicators for Children: Percent Change from 1985 to 1995 for Tennessee and the United States



Source: Kids Count Data Book: State Profiles of Child Well-Being, Annie E. Casey Foundation, Baltimore, MD, 1998.

Note: Negative values indicate a decrease from 1985 to 1995, thereby indicating improvement. For example, there was a decrease in the percent change from 1985 to 1995 for infant mortality rates. A decrease in this rate indicates improvement in this area. Positive values indicate an increase from 1985 to 1995, thereby indicating the problem has worsened. For example, teen birth rates increased from 1985 to 1995, indicating the problem has worsened.

Social and Economic Indicators for Children: Percent Change from 1985 to 1995 for Tennessee and the United States



Source: Kids Count Data Book: State Profiles of Child Well-Being, Annie E. Casey Foundation, Baltimore, MD, 1998.

Note: Negative values indicate a decrease from 1985 to 1995, thereby indicating improvement. For example, there was a decrease in the percent change from 1985 to 1995 for infant mortality rates. A decrease in this rate indicates improvement in this area. Positive values indicate an increase from 1985 to 1995, thereby indicating the problem has worsened. For example, teen birth rates increased from 1985 to 1995, indicating the problem has worsened.

EMERGING HEALTH CARE INITIATIVES

The Tennessee Department of Health (TDH) is committed to a range of responses to the health care needs and problems of Tennesseans. Initiatives are underway to:

- **Increase Health Insurance Coverage and Access for the Uninsured and Uninsurable Through TennCare**
 - in 1994 in order to reduce health care expenditures, Tennessee implemented managed care with a single point of entry.
 - an estimated 90%-95% of all Tennesseans now have health insurance.
 - services are offered through managed care organizations (MCOs), which provide inpatient and outpatient hospital care, physician services, prescription drugs, lab and x-ray services, medical supplies, home health care, hospice care, and ambulance transportation. Behavioral health organizations (BHOs) provide mental health and substance abuse treatment services.
 - enrollment opened in April, 1997 to all children under 18 who do not have and cannot obtain insurance coverage.
- **Develop partnerships**

To bring together complementary assets, TDH is partnering with:

 - Tennessee Department of Economic and Community Development
 - Community Health Research Group at The University of Tennessee, Knoxville
 - U.S. Department of Health and Human Services and the National Center for Health Statistics
 - Tennessee Commission on Children and Youth
 - Social Science Research Institute at The University of Tennessee, Knoxville
 - Tennessee Department of Education
 - Tennessee Valley Association
 - Tennessee Hospital Association
 - East Tennessee State University's Public Health Program
 - TN KIDS partners with:
 - Tennessee Commission on Children and Youth
 - Department of Children's Services
 - Department of Education
 - Department of Human Services
 - Department of Mental Health, Mental Retardation, and
 - Tennessee Council of Juvenile and Family Court Judges
 - Centers for Disease Control and Prevention (CDC)
 - Regional and local health councils, formed in 1996

- Plus numerous other agencies and entities.
- **Share Information**
To promote knowledge dissemination, the TDH proposes to:
 - exchange health information electronically via select tele-communications initiatives across the state
 - promote community health information networks (CHINs) and expansion into systems which link all partners, especially at the community level.
- **Provide Health Information and Technology**
 - maximize the use of technology to eliminate geographic and bureaucratic barriers to communication and information exchange.
 - promote multipurpose networked data systems.
 - develop community access systems including the Internet, wide area network, and Geographic Information Systems (GIS).

IMPROVEMENT STRATEGIES: WHERE DOES TENNESSEE GO FROM HERE?

- A cornerstone TDH improvement strategy is the implementation of a community diagnosis process. This involves health assessment, policy development, and quality assurance, which are founded on information-based decision-making, collaboration, and accountability.
- The mission of the community diagnosis process is to develop a community-based, community-owned, health services assessment and planning process and to implement improvement strategies.
- The process involves six stages:
 - initial design or start-up
 - data gathering
 - data analysis
 - problem identification and prioritization
 - intervention development
 - community diagnosis plan.
- Ninety-five county health councils have been established statewide to carry out assessment functions, reflecting TDH's commitment to decentralization of planning and community-based problem-solving.
- Efforts are underway to:
 - apply quality of care considerations to health issues and build consensus on how quality of care can and should be measured;

- examine the impact of Managed Care Organizations (MCO's) on quality of care issues, especially at the community level;
- develop innovative, inclusive, and sustainable partnerships across state and local levels; and
- plan for optimal utilization of shared data and interactive communications technologies.

THE TN KIDS INITIATIVE

The main Children's Initiative is Governor Don Sundquist's continuing effort to better coordinate and improve services for children.

- Programs scattered among six departments were consolidated and reformed within a new Department of Children's Services. Today, the State provides more and better services to children at less cost per day.
- TennCare, Tennessee's replacement for the Medicaid program, was expanded to provide coverage to every child and 18 year-old young adult who cannot otherwise obtain health insurance protection. In 1998, that protection was extended to children in working low-income families whose parents had access to insurance but could not afford to buy it.
- The Governor's Prevention Initiative provides grants to community-based organizations with programs proven effective in discouraging teen pregnancy, and keeping kids in school, out of trouble and off drugs.
- The Governor's Task Force on Child Care produced recommendations for increasing the availability of trustworthy child care services. As part of the Sundquist Administration's Families First welfare reforms, the state has invested an additional \$85 million in child care services.
- The Sundquist Administration has completed a six-year, \$1 billion increase in funding for public education and, through its ConnectTen program, has made Tennessee the first state in the nation to connect all of its schools and libraries to the Internet.

Tennessee's efforts earned a grant from the Danforth Foundation, which funded a year-long planning effort for improved coordination and delivery of services for children. Four cabinet members, along with legislators, elected officials, children services providers and child advocates, spent over a year developing the strategy behind the TN KIDS concept:

- Priority on early intervention and prevention services;
- Coordination of services for families and children at the state and local level; and

- Increased involvement of families and communities in programs for children.
- Measurable goals and objectives will be adopted for all activities and evaluated with a report to the State.

TN KIDS is how Tennessee will meet Governor Sundquist's challenge to offer every child in the State a safe, healthy start and an excellent education.

SUMMARY

Introduction

- The Tennessee Health Status Report, 1998 is the second in a series of Tennessee Health Status Reports. These reports are benchmark, objective appraisals of the health status of Tennesseans.

Demographic Changes, Estimates and Projections

- Compared to the United States, in 1996, Tennessee had:
 - a lower percentage of Asians/Pacific Islanders
 - a slightly lower percentage of American Indians/Eskimos/Aleuts
 - a higher percentage of blacks
 - a similar percentage of whites
 - a lower percentage of Hispanics.
- Tennesseans were poorer and less well-educated than the average U.S. resident.
- The number of elderly persons (ages 65 and over) has increased by 11% from 1990 to 1996 in Tennessee. In 1996, people aged 65 and over made up 12.9% of Tennessee's total population compared with 12.7% in 1990.
- Among the elderly, the age-group with the largest percentage increase (28%) from 1990 to 1996 was the oldest old, ages 85 and over. This age-group also had the largest gap in the percentage (73%) of females compared to males (27%) in 1996.
- If Tennessee duplicates the projected population trends for the United States, the percent of the population in their 50's will increase by approximately 50% from 1996 to 2006. This is largely due to the fact that post-World War II baby boomers began to turn 50 in the latter part of 1996.

Mortality in Tennessee, 1996

- The crude death rate in Tennessee in 1996 was 966 deaths per 100,000 population. Respective rates for white males, white females, black males and black females were 1014, 935, 1105 and 862.
- Life expectancy at birth has fluctuated over the period 1990-1996 for the Tennessee population. A newborn in 1996 could be expected to live 74.8 years – up from 74.2 years in 1990. In 1996, life expectancy at birth for the general US population was 76.1.

- White males in Tennessee exhibited a steady gain in life expectancy at birth between 1990 and 1996. This gain was almost a year – with the increase from 71.3 to 72.2 years.
- Among whites, the gender gap in life expectancy at birth declined almost one year between 1990 and 1996. This paralleled the national trend. In 1990, white females had a life expectancy of 79.1 years. By 1996, it was marginally higher at 79.2 years.
- In contrast to whites, the gender gap in life expectancy at birth for blacks in Tennessee expanded -- from 8.7 years in 1990 to 9.5 years in 1996. Nationally, the advantage for black females declined by a year between 1990 and 1996, from 9.1 years to 8.1 years.
- In descending rank order, the five leading causes of death in Tennessee in 1996 were heart disease, cancer, stroke, unintentional injury (“accidents and adverse effects”), and chronic obstructive pulmonary disease (COPD).
- Heart disease and cancer combined to cause 54% of all deaths in 1996. Stroke, unintentional injury, COPD, and pneumonia and influenza collectively accounted for 21% of the deaths.
- In 1996, injury predominated as a cause of death in Tennessee from ages one year through 44. Unintentional injury was the leading cause of death from ages one through 34, and the second leading cause of death at ages 35-44. Suicide ranked second as a cause of death at ages 10-14 and third at ages 15-24. Homicide ranked second at ages 15-34 and third at ages 5-9.
- Diabetes ranked as the sixth leading cause of death among Tennesseans ages 45 years and older and seventh overall. It ranked fourth among blacks from ages 45 through 64, and fifth overall and at ages 65 and older. Diabetes ranked as the third leading cause of death among black females ages 45-64 and fourth overall. It ranked fourth for white females ages 55-64 and sixth at ages 65 years and older.
- In 1996, the infant mortality rates for the total Tennessee population, whites and blacks, respectively, were 8.5, 6.7 and 15.4 per 1,000 live births. The rate for the United States population was 7.3. National target rates for infant mortality, established under the Year 2000 Objectives, are 7 per 1,000 live births for the total population and 11 for the black population.
- The neonatal and postneonatal mortality rates in 1996 for Tennessee were 5.2 and 3.3 per 1,000 live births, respectively. Corresponding rates for whites were 4.2 and 2.5, and for blacks were 9.3 and 6.1. Year 2000 target rates for the total US population are 4.5 and 2.5 per 1,000 live births, respectively – and for blacks 7 and 4.

- The infant mortality rate for blacks declined by 3% between 1990-1992 and 1994-1996. Their 1994-1996 rate was 17.2 per 1,000 live births. A decline of 8.6% was also observed in their neonatal mortality rate. Their neonatal mortality rate for 1994-1996 was 10.7 per 1,000 live births. Their postneonatal mortality rate was 6.5 per 1,000 live births, an increase of 3% over the 1990-1992 rate.
- For the period 1994-1996, the death rate among infants from congenital anomalies was 198 per 100,000 live births. This represents a decline of 8% from 1990-1992. The rate for SIDS declined by 20% to 133 per 100,000 live births. Yet, no such downward trend is evident in the death rate for disorders relating to short gestation and unspecified low birth weight. This rate remained virtually unchanged from 1990-1992 to 1994-1996 (115 versus 114).
- The age-adjusted coronary heart disease death rate for the Tennessee population declined 7% between 1990-1992 and 1994-1996 --from 135 per 100,000 population to 126. The national target rate established under the Year 2000 Healthy People Objectives is 100 per 100,000.
- The age-adjusted cancer death rate for the Tennessee population decreased by 1% between 1990-1992 and 1994-1996. For the period 1994-1996, the rate was 138 per 100,000 population. This compares with the Year 2000 target rate for the national population of 130 per 100,000.
- The age-adjusted stroke death rate for whites rose less than 1% between 1990-1992 and 1994-1996. However, the rate for blacks manifested a 10% increase. Their 1994-1996 rate was 62 per 100,000. This was more than double the rate for whites. The Year 2000 target rate for the black population is 27 per 100,000.
- The Global Burden of Disease Study⁴³ is a joint project of the World Health Organization, World Bank, and Harvard University. In this study, causes of death are categorized under three broad groups: Group I comprises communicable diseases like HIV and tuberculosis; maternal causes; conditions arising in the perinatal period; and nutritional deficiencies. Group II comprises noncommunicable diseases like heart disease and cancer. Group III comprises injuries - both intentional and unintentional. Group I causes of death predominate at low levels of social economic development, as true for the United States in the past and many less developed countries today. Comparing Tennessee's population broken down by race and sex, using these three categories, could assist in health care planning and prioritizing.
- In Tennessee for the period 1994-1996, noncommunicable disease accounted for 89% of white female deaths, 86% of black female deaths, 84% of white male

⁴³C.J.L. Murray and A.D. Lopez, eds. The Global Burden of Disease, vol. I. (Cambridge, MA: Harvard University Press, 1996).

deaths, and 75% of black male deaths. Injuries were responsible for 13% of black male deaths, 10% of white male deaths, 5% of black female deaths, and 4% of white female deaths. The communicable disease category accounted for 12% of deaths among black males, 9% among black females, and 6% among both white males and females.

- For 1994-1996, the age-adjusted injury death rate was 149 per 100,000 for black males, 92 for white males, 41 for black females, and 33 for white females. Since 1990-1992, there was a 21% increase in the rate for black females, a 6% increase for white females, and a 2% increase for white males. By contrast, the rate for black males declined 4%. The large rate increase for black females is explained by the 46% increase in their age-adjusted motor vehicle crash death rates between 1990-1992 and 1994-1996.
- For 1994-1996, the age-adjusted death rate for the communicable disease category was 114 per 100,000 population for black males. Corresponding rates for black females, white males, and white females were 50, 41, and 23, respectively. Since 1990-1992, the rate had declined 2% for white males. There were increases of 13% for black males, 8% for white females, and 3% for black females. The fact that the age-adjusted injury death rate declined as the corresponding communicable disease death rate rose among black males suggests that some males within this high risk group in 1994-1996 were dying of communicable disease instead of injury.

Ranking Tennessee's Health Status Relative to the U.S., 1996

- In 1996, Tennessee ranked 42nd among the states in the United States in overall "healthiness". It ranked 35th in 1990. Tennessee was one of 34 states whose healthiness score dropped between 1995 and 1996, and was among 13 states showing a declining score between 1990 and 1996.
- Between 1990 and 1996, Tennessee's healthiness score declined by 2%. This contrasted with the 3.6% increase registered for the nation. Increase in risk for heart disease, high prevalence of smoking, and a decline in support for public health care are among the most common causes for declining state ranks overall.
- Tennessee's healthiness score in 1996 was 11% below the average for all states combined. It was 5% below average in 1990 and 8% below in 1995.
- In 1996, Tennessee ranked close to or slightly above the national average in level of employment, infant survival, and availability of adequate prenatal care. Tennessee's strengths were identified as low unemployment, a low infant mortality rate and adequate prenatal care relative to the U.S.
- Support for public health care (1994-1995 data) was 11% lower in Tennessee than in the U.S. The index for Tennessee was 1.3 compared to 1.5 for the U.S.

- Work status disability, defined as the percentage of people with a disability who are prevented from working, was 38% higher in Tennessee (5.8%) than the U.S. (4.2%).

Special Population Subgroups: Health and Health Care Issues - Hispanics

- The Hispanic population in Tennessee increased from 32,742 people in 1990 to an estimated 52,302 people in 1996, an increase of approximately 60%. This was a little more than six times Tennessee's overall population increase of 9% between 1990 and 1996.
- The Hispanic population in Tennessee is projected to increase to 63,617 by the Year 2000. This represents a 93% increase over Tennessee's Hispanic population in 1990.
- Leading causes of death among Hispanics in 1996 were cancer at 19% of deaths; heart disease at 18%; accidents other than motor vehicle accidents (MVA's) - 9%, MVA's - 7%; and cerebrovascular disease (CVD) - 6%. HIV/AIDS and suicide each made up 3% of deaths to Hispanics, while diabetes, pneumonia/influenza, and homicide each accounted for 2% of Hispanic deaths.
- Hispanic adults represented about 1% of adults 18 years of age and over in the Tennessee Alcohol and Other Drug Needs Assessment Survey of 1993 (79 out of a total sample size of 7,948). About 1% of adults aged 20 and over in Tennessee were Hispanic in 1996 (32,881 Hispanics out of 3,826,384 adults aged 20+).
- Fair or poor health was less likely to be reported by Hispanic adults (14%) than other adults (19%) in 1993. The former were somewhat more likely to report being disabled or functionally impaired (15% compared to 13% of non-Hispanic adults).
- The prevalence of diabetes was substantially higher among Hispanic females than any other sex-race groups. Fifteen percent of Hispanic females, compared to 6% of non-Hispanic females, 8% of Hispanic males, and 6% of non-Hispanic males, reported ever being diagnosed with or treated for diabetes.
- Hispanic males were at excess risk for hypertension. The prevalence of hypertension was 39% among Hispanic males, 19% among other males, and 25% and 28% among Hispanic females and non-Hispanic females, respectively.
- Despite their increased risk of diabetes and hypertension, Hispanics were significantly more likely than non-Hispanics to lack health insurance in 1993. The former were twice as likely to lack health insurance as the latter. Twenty-two percent of the former compared to 13% of the latter were uninsured.

- A higher percentage of Hispanic than non-Hispanic adults reported a current addiction to AOD (4.3% versus 2.5%, respectively). A higher percentage of Hispanics had received formal AOD treatment (5.1% compared to 2.1% among other adults).
- Two percent of high school students in Tennessee were of Hispanic origin in 1995/1997.
- Hispanic students were more likely to be poor (i.e. come from families receiving public assistance or welfare including WIC, food stamps, AFDC, or TennCare) than other students (18% compared to 11%, respectively).
- Hispanic students were less likely to come from two-parent families - 54% versus 70% of non-Hispanic students.
- Thirteen percent of Hispanic students, compared to 8% of other students, reported their health as fair or poor. Disability or functional impairment was three times more frequently reported by Hispanic youth (10%) than other youth (3%).
- Injury in fights and physical abuse and assault were more prevalent among Hispanic youth than other youth. For example, fight injuries in the 12 months prior to the survey were reported by 8% of non-Hispanic and 14% of Hispanic students.
- Alcohol and other drug use and abuse were more prevalent among students of Hispanic origin.
- Suicide attempts were nearly twice as frequently reported by Hispanic students at 23%, compared to 13% of other students. Twice the proportion of Hispanic suicide attempters used AOD before attempting suicide than did other students who attempted suicide (14%).

Special Population Subgroups: Health and Health Care Issues - African-Americans

- Homicide was the fourth leading cause of death for black males in Tennessee, and did not figure among the top five causes of death for white males. The age-adjusted homicide death rate for black males was 66 per 100,000 in 1996 compared to 8 among white males. This represents an eight-fold excess in male homicide rates among blacks in Tennessee. Black females also had higher age-adjusted homicide death rates (11 per 100,000) than their white counterparts (3 per 100,000) by nearly four times.
- Homicide risk factor profiles differed by race among male high school students in Tennessee. More black male high school students were involved in gang fights in the past 12 months than white male students. Similar proportions of black and white male students carried weapons in the past 12 months. A higher percentage

of black students reported having sold illegal drugs in the past 12 months, while a higher percentage of white male students reported having fights or arguments because of using alcohol or other drugs.

Special Population Subgroups: Health and Health Care Issues- Arrestees

- Adult arrestees were 25% more likely than juvenile arrestees to report fair or poor physical health in the last 12 months, and the former were 77% more likely to report disability or functional impairment.
- Rates of utilization of medical care services in the past 12 months were very similar for juvenile and adult arrestees, including percentages utilizing physicians' services, making emergency department visits, and being admitted to hospitals. However, 25% more juvenile arrestees had ever received mental health or psychiatric treatment than was the case among adult arrestees.
- Nearly 3 times more adult arrestees had no health insurance than juvenile arrestees (36% of adults and 13% of juveniles lacked health insurance). Adult arrestees were 41% more likely to report ever having trouble getting medical care compared to juvenile arrestees (16% of the former versus 12% of the latter).
- Fifteen percent of juvenile and adult female arrestees were pregnant when arrested. Pregnant females represented 3% of adults and 5% of juveniles in the arrestee study.
- Between 10% and 20% of arrestees were homeless in the 12 months prior to their arrest, including 11% of juveniles and 19% of adult arrestees.

Special Population Subgroups: Health and Health Care Issues - High School Students

- The proportion of high school students who rarely or never wore a seat belt when riding in a car driven by someone else declined steadily from 31% in 1993 to 28% in 1995 to 25% in 1997.
- In 1997, males (29%) and ninth graders (30%) were most likely to report never or rarely wearing seat belts compared to their counterparts -- females (22%) and seniors (20%), for example.
- The percentage of high school students carrying a weapon in the past 30 days decreased from 30% in 1991 to 24% in 1997, with a high of 32% in 1993. Male students and 9th graders were most likely to carry weapons as noted earlier.

- Physical fights in the last 12 months were also less frequently reported by students -- 40% of students reported such fights in 1993 compared to 33% in 1997, a decline of about 18%.
- Serious consideration of suicide was lower among high school students surveyed in 1997 than in 1993 or 1991. A linear decline is evident in the percentage of students reportedly seriously considering suicide in the past 12 months, from 29% of students in 1991 to 22% in 1997. A slight decrease in the proportion of students making a suicide plan is observed from 1991 (19%) to 1997 (17%).
- The percentage of high school students actually attempting suicide has remained stable over time - around 9%-11%. Students reporting injury requiring medical care has also stabilized at 2%-4%.
- The percentages of students reporting ever having engaged in sexual intercourse have declined from 62% in 1993 and 61% in 1995 to 53% in 1997.
- Adolescent (13-19) birth rates have indeed declined from 1990 to 1996 from 53.7 per 1,000 to 48.2 per 1,000, a decrease of 10%.
- From 1990 to 1996, youth suicide rates declined by 16%, from 9.3 to 7.8 per 100,000 among youth aged 13-19.
- Homicide rates among youth ages 13-19 have risen in Tennessee, from 9.5 in 1990 to 13.7 in 1996, a 44% increase.
- Use of certain drugs, especially marijuana, cigarettes and crack/cocaine, has increased in the 1990's.
- Cigarette smoking in the past 30 days has increased from 30% of students in 1991 to 39% in 1997, a 30% increase.
- Crack/cocaine use has increased slightly from the low of 5% lifetime users in 1993 to 6% in 1995 and 7% in 1997.
- In 1997, 11% of Tennessee high school students carried a weapon, such as a gun, knife or club, on school property on one or more days within 30 days of the survey. Male students were about five times more likely to report carrying weapons to school than female students (19% compared to 4%, respectively).
- Lack of perceived safety at or on the way to or from school resulted in 5% of students not attending school on one or more of the past 30 days. This affected male and female students similarly. But more younger students (9th and 10th graders) reported feeling unsafe than older students (11th and 12th graders).

Percentages reporting school absenteeism due to feeling unsafe ranged from 6% of 9th graders and 5% of 10th graders to 3% of both 11th and 12th grade students.

- More than one in four (28%) of students had someone offer, sell or give them an illegal drug on school property during the 12 months prior to the 1997 survey - more than 1 in 3 boys (34%) and 1 in 4 girls (23%).
- Both smoking cigarettes and using smokeless tobacco on school property were more common among male students than female students. Smoking at school was nearly twice as common among males (19% versus 11% among females), while use of smokeless tobacco at school was nine times more frequent among males.
- Lifetime prevalence of cigarette smoking among Tennessee high school students surveyed in 1997 was 74%, similar for both males and females.
- In 1997, 30-day smoking rates were 39%, with 40% of males and 38% of females smoking currently. Current smoking increased with grade level such that 34%-36% of 9-10 graders reported smoking compared to 41% of 11th graders and 47% of 12th graders.
- Thirty-nine percent of students tried to quit smoking cigarettes. This suggests that a very high percentage of students were contemplating and attempting to quit smoking. Similar proportions of male and female students had tried to quit smoking. Only a slightly smaller percentage of 9th graders (37%) than higher grade students (40%-41%) had tried to quit.
- Three-quarters of high school student respondents reported that they had at least one drink of an alcoholic beverage in their lifetimes. The percentages were similar for males and females, but increased with grade level. The lifetime prevalence of drinking alcohol ranged from 71% of 9th graders and 73% of 10th graders, to 76% of 11th graders and 83% of 12th graders.
- Almost half (45%) of Tennessee high school students reported using alcohol in the past 30 days (47% of males and 43% of females).
- Twenty-nine percent of Tennessee high school students surveyed reported heavy or binge drinking; that is, drinking five or more drinks of alcohol on at least one occasion during the past 30 days. Male students (33%) were more likely to drink alcohol heavily or binge drink than female students (24%).
- Percentages of heavy drinkers by grade were 22% of 9th graders, 28% of 10th graders, 30% of 11th graders and 38% of 12th graders.
- Ten percent of students had tried marijuana for the first time before age 13.

- Early use of marijuana was twice as high among 9th graders as 12th graders, partly a drop-out effect. Fifteen percent of 9th, but 8% of 12th graders, reported early initiation of marijuana use.
- Marijuana use in the past 30 days was reported by 28% of students, with both sexes being similarly affected (32% of males and 24% of females).
- Seven percent of students used any form of cocaine in 1997, and 5% used crack or freebase cocaine. Males were more likely than females to have ever used cocaine or crack. Three percent of students used any form of cocaine in the past 30 days (5% of males and 2% of females).
- Twenty-two percent of students had sniffed glue, breathed the contents of aerosol spray cans or inhaled any paint or spray to get high during their lifetimes.
- Six percent of students had taken steroid pills or shots without a doctor's prescription, a practice that was more common among males than females.
- Fifteen percent of students had used other types of illegal drugs, including LSD and other hallucinogens, ice or crystal methamphetamine, heroin and others.
- In 1997, 53% of students reported ever having had sexual intercourse. Similar percentages of males and females (55% of the former and 52% of the latter) reported having had sexual intercourse. Proportions rise with grade level from 47% of 9th graders to a high of 66% of 12th graders.
- Thirty-eight percent of students had sexual intercourse during the past 3 months. Again, no substantial differences were observed by sex (40%, female students and 37%, male students), but prevalence increased from 9th grade (33%) to 12th grade (48%).
- Confining the comparison to changes in reported practices from 1995 to 1997, fewer students (10% versus 13%) had engaged in early sexual intercourse - defined as initiation before age 13.
- There was a reduction in the percentage of students reporting drinking alcohol or using drugs before their last sexual intercourse. The combination of AOD use and sex was reported by 20% of students in 1995 and 12% in 1997. A decline was observed for both males and females.
- The percentage of youth using birth control methods, especially condoms, had also increased. These percentages rose from 45% in 1991 and 54% in 1993 to 58% in 1995 for students using condoms as a percentage of students who had had sexual intercourse. Among sexually active students using any birth control method at last intercourse, 79% had done so in 1991, 83% in 1993 and 81% in 1995.

Special Population Subgroups: Health and Health Care Issues - Young High School Leavers

- Young school leavers are adults aged 18-34 who left high school before graduating or receiving a diploma or GED. School leavers had, on average, about 4 years less schooling than others their age. Young adult school leavers had completed an average of about 9.8 years of schooling, while the average educational attainment for comparable stayers was 13.6 years.
- Young school leavers were much more likely to rate their health as fair or poor (19%) than stayers (6.5%). The former (14%) were also more likely to report disability or functional impairment than stayers (5%). The combined percentage of young adults either ill or disabled was 24% of school leavers and 9% of stayers, a three-fold difference.
- Young school leavers were more likely to report being diagnosed with, or treated for such chronic problems as hypertension (15% versus 9%), cancer (4.6% versus 1.5%), diabetes (5% versus 2.5%), and GI tract disorders (15% versus 8%) than stayers.
- School leavers were significantly more likely to report being severely stressed in the past 30 days (14% versus 9%), and to report one or more emotional or psychiatric symptoms in the same period (55% versus 33%).
- Young school leavers in 1993 were more likely to lack any form of health insurance than stayers (32% versus 17%, respectively). The former were also more likely to be enrolled in Medicaid, now TennCare (22% compared to 6%).
- Young school leavers reported significantly more problems accessing health care in the past 12 months (11% versus 5%), particularly problems in being denied medical care because of inability to pay or inadequate coverage (47% versus 23%) and problems related to distance from sources of health care (32% versus 6%).
- Young school leavers were much more likely to use tobacco, equally likely to use illegal drugs, and substantially less likely to use alcohol than stayers.

Adult Health Status in Tennessee, BRFSS, 1996

- Nearly 1 in 5 Tennessee adults ages 18 and over living in households perceived their general health as fair or poor in 1996.

- Among Tennessee adults in 1996, 28% had been told at least once that their blood pressure was high. No appreciable differences were observed by sex or race, but large differences were noted by age, education and income.
 - Hypertension prevalence ranged from 11% among 18-24 year-old adults to 46% among those 65 and over.
 - Hypertension prevalence was highest among those with the lowest incomes.
 - College graduates were least likely to report hypertension (22%), while adults with some high school education (45%) were most likely to do so.
 - Hypertension was lower in younger males than females (ages 18-24) but was higher among older males than females.
- Diabetes was reported by 5% of Tennesseans in 1996.
 - Excess prevalence of diabetes was observed among nonwhites and females.
 - Diabetes risk rose with age.
 - Low income was associated with diabetes morbidity. Poorer adults had the highest prevalence of diabetes.
 - Less well-educated adults were also more likely to report diabetes.
- Lack of a health insurance plan was reported by 12% of adults, affecting more males (14%) than females (10%) and more nonwhites (17%) than whites (11%).
- Twenty percent of Tennessee females ages 40 and over had never had a mammogram, and 29% had never had either a mammogram or a clinical breast examination.
- Females who were never married (32%) or separated (30%) were more likely to have never had mammograms than other females. The lower the income and educational levels, the more likely females ages 40 and over in Tennessee were to have never had mammograms.
- Thirty-one percent of adults in Tennessee in 1996 had been told they had high cholesterol by health professionals. The national target for Year 2000 is 20%.
- High cholesterol was more prevalent among females. However, blacks and whites did not differ on self-reported high cholesterol.

- Obesity was reported by 29% of Tennessee adults -- 31% of males and 28% of females. The national target is 20% overweight adults by Year 2000.
- Overall, 33% of Tennessee adults were non-users of safety belts, twice the prevalence targeted by Year 2000 as a health objective for the nation.
- About 1 in 70 Tennessee adults (1.4%) reported drinking alcohol and driving in the past 30 days. Nearly four times more males than females (2.2% versus 0.6%) and about 50% more whites than blacks (1.4% versus 0.9%) reported drinking and driving.
- Tennesseans in 1996 were more than four times as likely to report sedentary lifestyles (68%) as the 15% of adults targeted in Year 2000 Objectives.
- Excess risk of sedentary lifestyle was observed for nonwhites (70%) compared to whites (68%).
- Inadequate education and low income were associated with sedentary lifestyles. The less well-educated and poorer among adults had the highest prevalence of sedentary lifestyles, and the most well- educated with the highest incomes had the lowest prevalence.

Violence in Tennessee -- Mortality (Homicide/Suicide) and Morbidity (Assault, Depression, and Suicide Attempts)

- The age-adjusted homicide rate for Tennessee for the period 1994-1996 was 11 per 100,000 population. This was 6% below the rate for the period 1990-1992. The Year 2000 target rate is 7.2 per 100,000 population.
- For the period 1994-1996, the homicide rate for Tennessee children under 3 years of age was 5.9 per 100,000. This represented a decline of 3% since 1990-1992. The Year 2000 national target is 3.1 per 100,000.
- The homicide rate for black children under age 3 for 1994-1996 was 13.6 per 100,000, a 20% decline since 1990-1992.
- The suicide rate for Tennessee youth, defined as the 15-19 year-old population, increased by 3% from 1990-1992 to 1994-1996. For 1994-1996, the rate was 10.2 per 100,000 population. This compares with the national target rate set for the Year 2000 Healthy People Objectives of 8.2 per 100,000.
- The age-adjusted suicide rate for the Tennessee population was 12.3 per 100,000 in 1990-1992 and 12.1 in 1994-1996. This compares with the National Year 2000 target rate of 10.5 per 100,000.

- The suicide rate for white Tennessee males ages 65 years and older declined 12% between 1990-1992 and 1994-1996. Nevertheless, the 1994-1996 rate of 44.9 was 13% higher than the Year 2000 national target rate for elderly white males of 39.2 per 100,000.

Mortality and Morbidity Related to Mental Disorders in Tennessee: Youth and Adults

- Suicide was the eighth leading cause of death in Tennessee in 1996. Whites, especially males, have higher suicide rates than blacks.
- In 1996, the suicide rate for Tennessee males ages 20-34 years was 30 per 100,000, compared with the national target rate of 21 established under the Year 2000 Healthy People Objectives. Their rate was 43% higher than the target.
- In a 1995/1997 CHR-G-TDH statewide survey, 13% of high school students in Tennessee reported having attempted suicide. Of the student suicide attempters, 25% reported using alcohol or other drugs just prior to their attempt. This represents 3.2% of all students.
- Poverty and mental health symptoms were linked. Poor high school students (33%) were more likely than non-poor students (20%) to report that they often or almost always feel depressed.
- White males ages 65 years and older were at very high risk for suicide. Their 1994-1996 rate of 44.9 per 100,000 was ten times higher than the corresponding rate for white females, and 57% higher than that for the overall Tennessee population (19.1). But their rate declined 12% between 1990-1992 and 1994-1996 from 50.9 to 44.9 per 100,000.

Comparison of Selected Infectious Disease Rates, Tennessee and the U.S., 1996

- In 1996, Tennessee's rates of gonorrhea, syphilis, chlamydia, hepatitis B and tuberculosis were all higher than in the U.S. as a whole.
- Chlamydia case rates were 31% higher in Tennessee (246.7 per 100,000) than in the U.S. (188.1) in 1996.
- Gonorrhea rates were 79% higher in Tennessee (220.1 per 100,000) than in the U.S. (122.8) in 1996.
- Primary and secondary syphilis cases per 100,000 population were 3.7 times higher in Tennessee (15.9) than case rates in the U.S. (4.3) in that year.
- Tuberculosis case rates were somewhat (19%) higher in Tennessee, at 9.5 compared to the U.S. tuberculosis rate of 8 per 100,000 in 1996.

- In 1996, AIDS case rates were lower by 38% in Tennessee than in the U.S. (15.5 compared to 25.2 per 100,000).
- From 1982 through 1997, a total of 6,655 Tennesseans were reported with HIV disease that progressed to AIDS. Of these persons, 3,139 were living with AIDS. Another 4,446 Tennesseans have been reported with HIV-only (not AIDS) since HIV reporting began in 1992.
- All 95 counties have reported at least one person with HIV disease.
- Approximately 1 in 4 Tennesseans reported with HIV infection was between the ages of 13 and 25 at the time of their HIV test. Persons testing HIV positive in their early 20's were possibly infected as teens.
- A decline has been observed in the number of new cases of infants developing HIV/AIDS due to perinatal exposure (i.e., being born to an HIV infected mother).
- The sharp decline in reported deaths due to AIDS has continued. From 1995 to 1996, deaths due to AIDS declined by 23% (from 529 to 406 deaths). Deaths declined again in 1997 by 30% to 286 deaths from 406 deaths in 1996. Prior to 1995, deaths due to AIDS were increasing substantially each year resulting in AIDS being a leading cause of death for young adults at that time. Declines have been attributed to 1) better HIV intervention programs which have slowed the overall growth of the epidemic, and 2) advances in medical treatments that slow the progression of HIV disease and prevent opportunistic infections. The use of protease inhibitor drugs and combination anti-retroviral therapies particularly hold promise to advance the clinical management of HIV disease.
- AIDS incidence (i.e., new cases of AIDS diagnosed each year) has leveled off since the beginning of 1995.
- Recent estimates of HIV prevalence suggest that 10,000 to 12,000 Tennesseans were living with HIV through 1997. New infections occurring each year may be about 1,000.

Adolescent Pregnancy in Tennessee: Pregnancy Rates, Birth Rates, and Adverse Conditions, 1990-1996

- One of Tennessee's health objectives for the Year 2000 is to reduce the pregnancy rate among females 14 and younger to no more than 2.5 per 1,000, and among females 15-17 to no more than 55 per 1,000. The first time Tennessee was able to meet both objectives was in 1996. The pregnancy rate among 10-14 year-olds was 2.5 per 1,000 in 1996 compared to 2.6 in 1995. Among 15-17 year-olds, the rate was 51.9 per 1,000 in 1996, down from 55.8 in 1995.

- Tennessee's adolescent pregnancy rate declined to a new all-time low in 1996. The pregnancy rate was 21.1 per 1,000 females aged 10-17, down from 22.0 in 1994 and 21.8 in 1995.
- The adolescent pregnancy rate was nearly 3 times higher among blacks than whites. Rates were 15.6 per 1,000 among white adolescent females and 42.2 per 1,000 among their black counterparts.
- Adolescent birth rates declined slightly more among blacks (9%) than whites (8%) from 1990 to 1996. This runs counter to trends observed by race in adolescent pregnancy rates. The rates for whites declined by more (19%) than did the rate for blacks (15%).
- The percent of births to adolescents ages 10-17 in which prenatal care was inadequate decreased over the seven-year period from 13.2% in 1990 to 9.8% in 1996, a decrease of 26%.
- Overall, 12.3% of births occurred to mothers ages 10-17 who had received either little or no prenatal care in 1996. This compares to 16.3% in 1990 – a one-quarter decline, with a larger decline among black females (29%) than white females (19%). Percentages of births with no or inadequate maternal prenatal care was 8.7% among whites and 16.9% among blacks in 1996.
- In 1996, 30% of births to females ages 10-17 who were reported to have consumed alcohol during pregnancy had abnormal conditions or congenital anomalies, compared to 10% of births to all adolescent females.

TennCare Enrollment and Eligibility as of December 1997 and February, 1998

- Statewide 1,208,334 persons were enrolled in TennCare as of February 1998.
- Tennessee had an average TennCare primary care provider to population ratio of 1:674 with a ratio of 1:365 for metropolitan regions and 1:1,419 for rural regions as of February 1998.
- Among TennCare enrollees, as of December, 1997, 31% were uninsured/uninsurable and 69% were enrolled through Medicaid.
- Medicaid enrollees in TennCare as of December 1997 were much more likely to be children aged 1-13, Medicaid/Medicare recipients with dual coverage or blind or otherwise disabled persons. Uninsured/uninsurable TennCare enrollees were much more likely to be males aged 14-44 and adults of both sexes aged 45-64.

Health Facilities, 1996

- While the number of hospitals in Tennessee in 1996 was 133 compared to 124 in 1995, after accounting for changes in reporting method, the actual number remained stable.
- The number of hospital beds, both licensed and staffed, continued to show a decline in 1996 though at a slower rate than that which occurred from 1991 to 1995.
- Utilization of short-term hospital care in Tennessee continued its decline in 1996.
- Overall, the average length of stay in Tennessee hospitals declined by 17% from 6.3 days in 1991 to 6.1 in 1993, 5.3 in 1995, and 5.2 days in 1996.
- The average daily census also declined from 13,350 in 1991 to 12,342 in 1993, 10,857 in 1995, and 10,570 in 1996. This decline amounted to 21% over the period.
- Occupancy rates for both licensed and staffed beds remained fairly stable from 1995-1996 for licensed beds (43%) and staffed beds (55% to 56%).
- From 1991 to 1996, total operating costs for hospitals in Tennessee increased approximately 27%. Total operating costs rose from \$4.5 billion in 1990 and \$4.9 billion in 1991 to \$5.8 billion and \$5.9 billion in 1993 and 1995, respectively. In 1996, these costs had reached \$62 billion. This represented a 27% increase over the period and a 5% increase in one year from 1995 to 1996.
- The statewide emergency room visit rate decreased from 475.6 visits per 100,000 in 1995 to 459.9 in 1996.
- The number of licensed nursing homes in Tennessee in 1996 was 347. This represented a 3% increase (11 nursing homes) since 1995 and a 15% increase (45 nursing homes) since 1990.
- Eighty-six percent of all licensed beds in nursing homes in the State were Medicaid/TennCare-certified in 1996.
- The number of nursing home patients in 1996 was 35,532 compared to 34,632 in 1995.
- Approximately five percent of the population aged 65 and over in Tennessee were in nursing homes in 1996. This proportion has remained relatively stable since 1990.

- The average length of stay continued to decline in 1996 to 245 days compared to 277 in 1995. This was a drop of nearly 12% in one year.
- Total operating costs for all nursing home facilities in Tennessee in 1996 were 1.36 billion dollars.
- Average cost per patient day for the state was \$124 in 1996.
- Five Regional Health Institutes (RMHIs)⁴⁴ were funded by the Department of Mental Health until July 1, 1996. After July 1, 1996 the main source of revenue for the RMHIs was through TennCare Partners reimbursement under contract with two Behavioral Health Organizations (BHO) that authorized services and the level of care for their consumers.
- The number of patients admitted⁴⁵ to the 5 RMHIs in Tennessee in 1997 was 6,359.
- Sixty-three percent of patients were admitted to the RMHIs for the first time in 1997 with 37% being readmitted patients.
- The age-groups of patients more frequently admitted to the RMHIs in 1997 included the prime working and childbearing ages --30-39 year-olds (28%), 21-29 year-olds (20%), and 40-49 year-olds (18%). Thirteen percent of those admitted to the RMHIs were between 13 to 17 years of age.
- The 6,359 patients admitted to the RMHIs in 1997 were fairly evenly distributed across the five facilities. MTMHI had the highest proportion of admissions at 26%, followed by MMHI at 21%, MBMHI at 20%, and LMHI at 17%. WMHI had the lowest percentage of admissions at 16% of the total.
- As of June 1998, 1,308 licensed facilities in Tennessee provided mental health and mental retardation services.
- Of these, approximately 52% were classified as mental retardation facilities, and the other 48% were classified as mental health facilities.

⁴⁴The psychiatric hospitals which are owned and operated by the State of Tennessee are referred to as Regional Mental Health Institutes (RMHI's). They are as follows: Lakeshore Regional Mental Health Institute (LRMHI) in Knoxville serving the East and Upper East Tennessee Regions; Moccasin Bend Mental Health Institute (MBMHI) in Chattanooga serving Southeast Tennessee and the Upper Cumberland Plateau; Middle Tennessee Mental Health Institute (MTMHI) in Nashville serving the Middle Tennessee area; Western Mental Health Institute (WMHI) in Bolivar serving West Tennessee; and Memphis Mental Health Institute (MMHI) serving Shelby County and counties bordering Shelby.

⁴⁵Unduplicated admissions are equivalent to a count of persons admitted at least once to the RMHI in 1997.

- Of these licensed facilities, 44% were located in the metropolitan regions of Tennessee.
- Three types of licensed mental health and mental retardation facilities were devoted solely to the needs of children: mental retardation preschool facilities, mental health therapeutic nursery facilities, and mental health intensive day treatment programs for children and adolescents. They comprised a total of 55, 5, and 46 facilities, respectively.

Health Manpower, Tennessee, 1998

- The FTE primary care provider-to-population ratio indicates potentially underserved areas. Provider shortage areas are designated by the TDH to include counties or groups of counties that display the worst 30 ratios of providers to total population.
- In 1998, this ratio was nearly four times larger in nonmetropolitan Tennessee than in metropolitan areas--1:2,110 versus 1:544, respectively.
- The most FTE primary care physicians were located in two metropolitan counties--Shelby County and Davidson County in 1998. Mid-Cumberland and Northeast Tennessee had the most primary care physicians among nonmetropolitan regions.
- Primary care physician-to-population ratios were lowest in Davidson and Knox Counties, on the one hand, and highest in Northeast Tennessee, on the other hand.
- To identify areas in Tennessee that potentially have inadequate provision of obstetric services, the ratio of providers to female population ages 15-44 years is used. Based on this measure, the 31 counties with the worst provider-to-population ratios have been designated as underserved in 1998. Each of these counties had a ratio of providers to relevant population of 1:5,032 or greater. The statewide ratio of obstetric providers to population was 1:1,662 in 1998 compared to 1:1,809 in 1997. The statewide ratio of obstetric care providers to females aged 15-44 was 1:1,737 in 1998, compared to 1:1,897 in 1997, and 1:1,729 in 1996.
- Twenty-nine of 85 (34%) Rational Service Areas for pediatrics (ages 0-17) were declared shortage areas including 32% of all counties.

Other Facilities and Manpower Data, Comparing Tennessee and the U.S.

- The annual average percent increase in state mental health agency per capita expenditures from 1981-1993 was 6.3% in Tennessee on a par with the 6% increase nationally.
- Hospital care expenditures in Tennessee rose from \$2,027 million in 1980 to \$7,208 million in 1993. In the period 1980-1990, the annual average increase was 10.5%, whereas in 1990-1993, the increase had slowed slightly to 9.4%. In the U.S., the respective increases were 9.6% for the earlier period and 8.4% for the later period.
- Community hospital beds per 1,000 civilian population increased from 1.9 in 1940 to 4.3 in 1994. However, in 1980-1990, the average annual decline was 1.1%. It was 2.7% in 1990-1994. National trends suggest less change in the U.S. than in Tennessee in beds per 1,000 population, which increased from 3.2 in 1940 to 3.5 in 1994.
- Substance abuse clients in specialty treatment in Tennessee rose from 183.6 per day in 1992 to 243.6 per day in 1993.

Children's Health Status and Health Initiatives in Tennessee (Kids Count and TN KIDS)

- In 1996, children ages 0-13 made up 20% of Tennessee's total population.
- The number of children in Tennessee increased by 11% between 1990 and 1996.
- The overall number of children under age 18 in Tennessee is projected to increase by 6% between 1996 and 2005. The projected changes from 1996 to 2005 by age of child are as follows:
 - Numbers of children 0-5 years old will decrease by 1%;
 - Numbers of children 6-12 years old will increase by 8%; and
 - Numbers of children 13-17 years old will increase by 13%.
- Between 1985 and 1995, infant mortality rates and child death rates decreased in Tennessee, as well as in the United States. The United States had a greater decrease in infant mortality rates than did Tennessee. Tennessee, on the other hand, registered a greater decrease in child death rates than did the United States.
- The increase in the rate of teenage injury deaths (by accident, homicide, and suicide) in Tennessee (34%) between 1985 and 1995 was substantially higher than the increase that occurred in the United States (3%) in the same period.

- Thirteen percent of all children under age 18 in 1995 did not have health insurance.
- Seventeen percent of children under age 18 in poverty in 1995 did not have health insurance, as was the case for 22% of children under age 18 in low-income working families.
- In 1995, 65% of Tennessee's children under age 6 lived with working parents. This was slightly higher than for the United States (63%).
- In 1995, 57% of children ages 6-12 in Tennessee lived with working parents, also slightly higher than the percent for the United States - 51%.
- The percent of children in Tennessee under age 13, living in low-income families, with working parents in 1995, was 26%. This was higher than the corresponding percent for the United States (21%).
- Between 1985 and 1993, there was a 10% decrease in the percent of children living in poverty in Tennessee. In 1985, the prevalence of childhood poverty was 27%, and in 1993, it was 24%.
- The percent of babies born at low-birth weight has increased 6.1% from 1990 to 1995. In 1990, 8.2% of the babies born (6,160 babies) weighed less than 5.5 pounds. Nationally, Tennessee ranked 47th worst on this indicator.
- Low-birth-weight babies are 40 times more likely to die during the first month of life than normal weight infants. Some factors common to low-weight births are known to be inadequate prenatal care; teenage pregnancy; poverty; and the use of tobacco, alcohol, and illegal drugs during pregnancy.
- There was a 14% increase from 1991 to 1996 in the number of students in public schools who were receiving special education services. In school years 1990-1991, 16% of the student population received special education services, compared to 18% in school year 1995-1996.
- Tennessee's high school leaving or "dropout" rate declined 29% from 1990-1991 (6.3%) to 1994-1995 (4.5%). Nationally, Tennessee ranked 38th on this indicator as reported in 1996. The rate is calculated by dividing the number of dropouts within the year by the net student enrollment at the end of the school year.
- From 1992 to 1996, the percent of students participating in the free- or reduced-price lunch program increased by 10%. In the 1991-1992 school year, 31% of the students participating in the School Lunch Program received lunch at free or reduced prices, compared to 34% in 1994-1995.

Emerging Health Care Initiatives

- To address these health care needs and problems of Tennesseans, initiatives are underway to increase health insurance coverage and access for the uninsured and uninsurable through TennCare, develop partnerships within and outside the public health community, share information and democratize access to scientific data and maximize the quality and availability of health information and technology such as on the HIT Web site (server.to/hit).

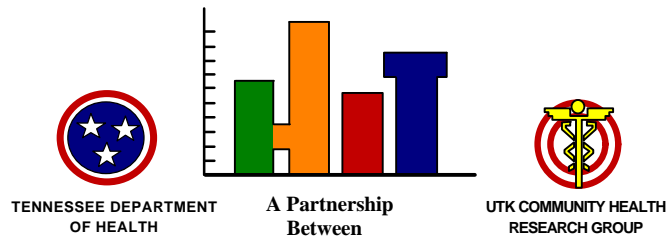
Improvement Strategies: Where Does Tennessee Go from Here?

- A cornerstone of the TDH improvement strategy is the implementation of the Community Diagnosis Initiative, which involves health assessment, policy development, and quality assurance and supports bottoms-up health planning. Ninety-five county health councils and 14 regional councils have been established statewide to carry out this process.

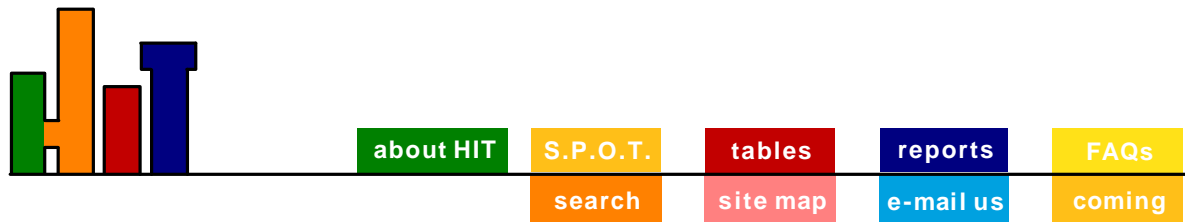
The TN KIDS Initiative

- The TN KIDS Initiative of Governor Don Sundquist is designed to better coordinate and improve services for children in Tennessee and is a centerpiece of the State's efforts to institute a child data base for problem and risk identification and needs assessment. This resource will be provided as part of the HIT Web site in a new area called SCORE, Summary COunty Results Explorer.

HEALTH INFORMATION TENNESSEE



Visit us on the Web at *server.to/hit*



ABOUT THE HEALTH INFORMATION TENNESSEE (HIT) Web SITE
addresses: server.to/hit or <http://www.web.utk.edu/~chrg/hit/index.htm>

The Health Information Tennessee (HIT) Web site (server.to/hit) is the innovative product of a partnership of the Tennessee Department of Health (TDH) and The University of Tennessee Community Health Research Group (UTK CHRG). It was designed as an interactive means of disseminating vital statistics, manpower, facilities and other data collected by the TDH and reported on by the UTK CHRG in the **Tennessee Health Status Reports of 1997 and 1998**. The goal of the project has been to support the bottom-up, community-based health planning effort called the Community Diagnosis Initiative adopted by the TDH in 1995. Through the 1997 and 1998 reports and the HIT Web site, fourteen regional health councils representing 95 counties are better able to assess and prioritize community needs and plan for effective prevention and intervention. The Internet was the chosen medium for data and report dissemination to provide ready access to summary statistics, data tables, and maps at the local level.

HIT (Health Information Tennessee) was created in January 1997. HIT not only provides a variety of previously calculated health and population statistics and prepared tables, but incorporates Statistical Profiling of Tennessee or SPOT. SPOT employs a lesser used Internet feature, Common Gateway Interface (CGI), to allow the user the opportunity to query various Tennessee health data bases in such a way that personalized charts and tables can be produced upon demand, interactively. The requested information is calculated at the moment the query is submitted by a self-modifying SAS program residing on a server computer at The University of Tennessee. In this way data can be analyzed and presented in an infinitely flexible manner; statewide and substate comparisons can be made; data can be standardized and updated constantly; data quality and accuracy can be assured; and access can be widespread and multifocal.

Besides death, birth and population data, data from two random sample surveys conducted in Tennessee by the Community Health Research Group for the Bureau of Alcohol and Drug Abuse Services are available for use on HIT/SPOT. These include the Tennessee Adult Alcohol, Tobacco and Other Drug (ATOD) Needs Assessment Survey of 1993 (n=8000) and the Tennessee High School ATOD Survey of 1995 and 1997 (n=102,000). These two data sets provide regional and statewide data for comparison and analysis in SPOT. Survey and other data sets, including mortality, natality, population, manpower and facilities data sets, can be used to triangulate on community problems. Example of questions that can be answered using SPOT involve what are the leading causes of death among particular gender, racial and ethnic, age, socioeconomic status and geographic groups, or how do lung cancer death rates in a county or region seem to be related to adult and youth smoking levels and patterns in that county or region. Other questions can be answered using comparisons of excess death rates by cause, excess risk factors for those death rates from survey data, and resource availability and accessibility data from joint annual surveys of facilities and manpower surveys .

The burden of illness and injury mortality can be displayed as simple data listings, pie or bar charts, plots, or layered maps at county, regional and statewide levels. Work is underway to improve the spatial resolution of the data to permit this at the census tract level as well. Interactive GIS capabilities on the Web site on HIT MapMaker allow for customized mapping of related exposures by overlaying census data with vital statistics, as well as overlays of cities and towns, hospitals, nursing homes, and other facilities. Data can be analyzed by age, sex, race, education, poverty status, Hispanic origins, and residence to yield comprehensive profiles of health exposures, risk and need for services in Tennessee using HIT and SPOT.

The mapping ability in HIT MapMaker greatly expands the utility of SPOT for community-based health needs assessment. The GIS component of HIT enables the user to customize maps at state, regional, and county levels. Basic atlas functions are provided interactively, along with bivariate overlay mapping using census and mortality data. The user interface is friendly and straightforward. Site users are able to create, view, alter, download, and print maps. Pan, zoom and identify functions will be available soon. Data from the SPOT component will be able to be transferred to the mapping program to produce age-sex-race and region-specific maps of mortality, morbidity and survey data, mapped in relation to locations of hospitals, nursing homes, and other health care facilities.

For more information please contact The University of Tennessee, Community Health Research Group, Suite 309, Conference Center Building, Knoxville, Tennessee 37996-4133, phone: 423-974-4511 or e-mail: chrg@utkux.utk.edu or sputnam1@utk.edu.

DATA COMPENDIUM FOR TENNESSEE HEALTH STATUS REPORT, 1998

Collection of the majority of the raw data cited here was sponsored and performed by the TDH. The analysis and reporting of the data for this preview was conducted by the UTK CHRG. In addition to data analysis and reporting, the UTK CHRG conducted four of the surveys.

The Data Compendium is alphabetized by name of the study/data set.

- **Name of the Study/Data Set: Adult Behavioral Risk Factor Surveillance System, 1997**
Sponsor: Tennessee Department of Health
Source: Centers for Disease Control and Prevention
Description: This data set is based on a survey administered to a random sample of the general population of adults, ages 18-64, living in households in all 50 states. It provides general information about health risks, behaviors, and attitudes of those sampled. The survey is designed to provide uniform data to identify chronic disease risks and guide health promotion and disease prevention programs. Approximately 1,400 interviews were conducted by telephone with respondents who were randomly selected from adult members of households in Tennessee.
- **Name of the Study/Data Set: Birth Data, 1989-1996**
Sponsor: Tennessee Department of Health
Source: Tennessee Department of Health , Certificates of Live Birth
Description: This data set includes information on all live births occurring in Tennessee as well as births occurring out-of-state to Tennessee residents. Basic demographic characteristics are available for the infant, as well as for the mother and father.
- **Name of the Study/Data Set: Joint Annual Report of Hospital Data, 1996**
Sponsor: Tennessee Department of Health
Source: Tennessee Department of Health, Health Statistics and Information
Description: Hospital-based data by Health Service Area (HSA), county, and the state are available covering services utilization, discharges, patient origin, inpatient newborn and maternal services, and selected financial data.
- **Name of the Study/Data Set: Joint Annual Report of Nursing Homes Data, 1996**
Sponsor: Tennessee Department of Health
Source: Tennessee Department of Health, Health Statistics and Information
Description: Nursing home-based data by Health Service Area, county, and state are available on licensure, accreditation, facilities and services, beds, personnel, utilization, skilled care procedures and selected financial data.

- **Name of the Study/Data Set: Mortality Data, 1990-1996**
Sponsor: Tennessee Department of Health
Source: Tennessee Department of Health , Certificates of Death
Description: This data set includes information on all deaths occurring in Tennessee as well as deaths occurring out-of-state to Tennessee residents for the years 1990-1995. Basic demographic characteristics are available for the decedent along with detailed information pertaining to the cause of death. Data linking infant deaths (under 1 year of age) with their corresponding Tennessee birth record are available.

- **Name of the Study/Data Set: Population Data, 1990 - 2000**
Sponsor: Tennessee Department of Health
Source: Tennessee Department of Health
Description: Population estimates are available for the State of Tennessee for the years 1990 - 2000, by race, sex, age, and county. [Note: the 1990 data are the actual Census counts for that year.] Data are available by single years of age through age 79. Ages 80-84 are grouped together into one category and ages 85 and over are represented by 85+. Race categories are white, black, and other.

- **Name of the Study/Data Set: Tennessee Alcohol and Other Drug Needs Assessment Survey of Adults, 1993**
Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health
Source: Community Health Research Group, The University of Tennessee, Knoxville
Description: This was a statewide random digit dial telephone survey of approximately 8,000 Tennessee adults ages 18 and over living in households in 1993. The purpose of the survey was to provide alcohol and other drug prevention and treatment needs assessment data for use in program planning, evaluation, and resource allocation. The study employed a two-stage probability sample. The 12 Community Health Agency divisions - 4 metropolitan counties and 8 nonmetropolitan regions - served as sampling units. Data on a range of health behaviors and risks, particularly those related to AOD, are available for 70% of Tennessee's population.

- **Name of the Study/Data Set: Tennessee Alcohol, Tobacco, and Other Drugs High School Survey, 1995/1997**
Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health
Source: Community Health Research Group, The University of Tennessee, Knoxville
Description: This study is part of a family of studies to provide comprehensive and accurate scientific data on levels and patterns of alcohol, tobacco, and other drug

(ATOD) use and abuse statewide and by region for use by state and local officials and community organizations and agencies. This statewide high school survey concerns health and lifestyles; alcohol and other drug use, abuse, and problems; exposure to violence in schools and elsewhere; and identification of risk and protective factors for a host of adverse consequences. The self-administered, optically scanned survey is based on a random sample of 9th-12th grade schools by region in Tennessee. Around 102,000 9th-12th graders were surveyed in public and private schools in 91 counties across the State. The Tennessee ATOD High School Survey sponsored by the Tennessee Department of Health Bureau of Alcohol and Drug Abuse Services in 1995 with a continuation in 1997 includes a random sample survey of 108 high schools and 59,000 students and is also used in this report to profile the health and lifestyles of adolescents in high school in Tennessee both statewide and regionally. The total sample includes more than 102,000 students from 195 schools in Tennessee, at least one school from each county with the exception of four counties (Lake, Lauderdale, Rutherford and Williamson).

- **Name of the Study/Data Set: Tennessee DUF/SANTA Arrestee Study, 1996**
Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health and the Federal Center for Substance Abuse Treatment
Source: Community Health Research Group, The University of Tennessee, Knoxville
Description: This study examines the alcohol and other drug (AOD) history, use, abuse, and dependence, and receipt of and need for treatment in a random sample of all arrestees, adult and juvenile, male and female, arrested for any offense in three urban areas (Knox, Davidson, and Shelby counties) and two rural areas (Jefferson and Putnam counties) in Tennessee in late 1995 and early 1996. Within each study facility in these areas, recent arrestees were randomly selected from the facility's intake log sheet. Eligible arrestees had to be arrested during the commission of a crime and brought into the facility no more than 48 hours before the start of an interviewer's shift. A total of 1,141 adults and 426 juvenile arrestees were interviewed.
- **Name of the Study/Data Set: Tennessee High School Leavers Study, 1994**
Sponsor: Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health
Source: Community Health Research Group, The University of Tennessee, Knoxville
Description: This study is based on a non-probability sample of 338 youth between the ages of 16 and 19 who left school without receiving a high school diploma or GED certificate and who were not enrolled full-time in a public, private, alternative, technical, or vocational school at the time of the study. Face-to-face structured interviews were conducted with youth in Knox, Davidson and Shelby Counties and

in two rural areas of Tennessee. The study examines the health risks, the use and abuse of alcohol and other drugs, and the alcohol and drug use problems experienced by these high school leavers. In addition, the study includes reasons given by these young people for leaving high school, as well as their experiences of coping in contemporary society without a high school diploma.

- **Name of the Study/Data Set:** **Youth Risk Behavior Surveillance System, 1997**
Sponsor: Tennessee Department of Health and Tennessee Department of Education
Source: Centers for Disease Control and Prevention
Description: The Youth Risk Behavior Surveillance System includes both a national school-based survey conducted by CDC as well as state and local school-based surveys conducted by state and local education agencies. The system monitors six categories of priority health-risk behaviors among youth and young adults: behaviors that contribute to unintentional and intentional injuries; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and STD's, including HIV infection; unhealthy dietary behaviors; and physical inactivity.
- The YRBSS was developed by the Centers for Disease Control and Prevention (CDC) to monitor priority health risk behaviors that contribute to leading causes of illness, injury and death and social problems among youth in the US. The 1997 YRBSS was conducted by the Tennessee Department of Education on 1418 students in 36 public schools in the Spring of 1997. The overall response rate was 55%, comprised of a 67% response rate for schools and 82% among students. No weighting of data was conducted due to an overall low response rate, and use of these data to generalize to other high school students in Tennessee is problematic and discouraged. However, these biennial surveys are the only source of time trend data on high school students available in the State. The 1995 YRBSS sampled 36 public schools and 3197 students for an overall response rate of 46% -- a response rate of 56% for schools and 83% for students. Again the low response rate precluded weighting of the data, and the same reservations concerning the ability to generalize to all Tennessee students exist. The 1993 YRBSS, which was conducted cooperatively by the Tennessee Departments of Health and Education, was administered to 3234 students in 35 public high schools in Tennessee during the Spring of 1993. In this survey, data were weighted and results are generalizable to the state as a whole. The results for 1993 can therefore be used to infer to the population of Tennessee high school students concerning high risk and priority health behaviors.

- **Name of the Study/Data Set: Tennessee KIDS COUNT - The State of the Child in Tennessee, 1996.**
Sponsor: Tennessee Commission on Children and Youth
Description: The County Report presents county-by-county data on the educational, social, economic and physical condition of children in Tennessee to encourage greater accountability for youth outcomes. Tennessee is one of 48 states receiving funding for the Kids Count Project from the Annie E. Casey Foundation, the nation's largest philanthropy devoted exclusively to disadvantaged children. The project's goal is to improve family and community environments that shape young people's health, development, education, opportunities and aspirations.

- **Name of the Study/Data Set: KIDS COUNT Data Book - State Profiles of Child Well-Being .**
Sponsor: The Annie E. Casey Foundation
Description: KIDS COUNT, a project of the Annie. E. Casey Foundation, is a national and state-by-state effort to track the status of children in the United States. By providing policy makers and citizens with benchmarks of child well-being, KIDS COUNT seeks to enrich local, state, and national discussions concerning ways to secure better futures for all children. At the national level, the principal activity of the initiative is the publication of the annual KIDS COUNT Data Book, which uses the best available data to measure the educational, social, economic, and physical well-being of children. The Foundation also funds a nationwide network of state-level KIDS COUNT projects that provide a more detailed community-by-community picture of the condition of children. Tennessee is one such state.

- **Name of the Study/Data Set: Estimates of the Population of Counties by Age, Sex, Race and Hispanic Origin: 1990 to 1996**
Sponsor: U.S. Bureau of the Census
Source: Internet Release date: December 18, 1997
http://www.census.gov/population/estimates/county/casrh_doc.txt
Description: These data are estimates of the resident population of the counties in the United States, by age (ages 0 to 84, 85 and over), sex (male, female), race (White; Black; American Indian, Eskimo and Aleut; Asian and Pacific Islander) for July 1 of each year from 1990 to 1996. The county estimates included in this release are developed in a two-step procedure. First a set of state estimates by age, sex, race, and Hispanic origin (with the same categories as given above) are developed. These state estimates are developed using a chart-component technique. The county detail estimates are produced in the second step using a ratio method. The ratio method is a mathematical technique for adjusting data to sum to a pre-determined total. It consists of multiplying each element of the data by the ratio formed by dividing the desired total by the sum of the data. Applying

the ratio method to a data set is referred to as raking. These data were developed as part of an ongoing project to develop postcensal population estimates of counties by age, sex, race, and Hispanic origin. Though the method employed produces estimates which are fully desegregated with respect to these characteristics, the limitations of the methodology are such that the census does not consider these data to be accurate for each individual cell. Although they do not have measures of error, census staff believe that aggregating the individual cells to larger groups reduces the level of error. Consequently, they offer the data in three different formats: 1) complete age and sex detail with no race or Hispanic origin information; 2) complete race and Hispanic origin detail with no age or sex information; 3) 5-year age categories by sex with limited race/Hispanic origin categories (total Hispanic; white non-Hispanic; White Hispanic; total Black; total American Indian, Eskimo, and Aleut; total Asian and Pacific Islander).

- **Name of the Study/Data Set: Narrowing the Gap: Minority Health in Tennessee, 1997 Edition**

Sponsor: Tennessee Department of Health, Office of Minority Health

Description: The 1997 edition of *Narrowing the Gap* represents the Tennessee Department of Health's update of the following documents: 1986 U.S. Department of Health and Human Services' *Secretary's Report on Minority Health*; 1986 state report *The Status of Black and Minority Health in Tennessee*; and the 1990 follow-up *Narrowing the Gap: Minority Health in Tennessee*. The latter Tennessee publication attempted to broaden the focus to include quality-of-life data. This current edition is a joint effort of several State agencies and continues to expand the focus to include more information on minorities' demographics, health, and social issues. Historically, Tennessee did not collect data by specific minority groups. Instead "white", "nonwhite", and "other" were used as categories. The system was upgraded to identify "white" and "black", and specifications are being added to identify the "Hispanic", "Asian", and "American Indian" groups. *Narrowing the Gap: Minority Health in Tennessee, 1997 Edition*, represents Tennessee's acknowledgment of the diversity of the State and awareness of the challenge in designing appropriate health care services presented by this changing face of Tennessee.

This report has been coauthored by Sandra Putnam, Ian Rockett, Valerie Brewer, Jeremy Miller and Kim Burley of the Community Health Research Group, The University of Tennessee, Knoxville. Special thanks to Renee Johnson whose excellent desk top publishing skills facilitated report production. Other CHRG staff whose hard work and expertise have been indispensable to this report are Don Broach, Kristin Bruce and Lynne Bownds. Bill Wirsing, Jean Moss, Tom Spillman, George Plumlee and Ann Hogan of the Tennessee Department of Health and their colleagues were all highly instrumental in producing this report. Their assistance is much appreciated.